

NOT FOR PUBLICATION UNTIL RELEASED BY THE  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 2002 NAVY/MARINE CORPS SHIPBUILDING PROGRAMS

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SEAPOWER SUBCOMMITTEE

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 2002 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.

Our mastery of the seas, made possible by the deployed presence of a substantial U.S. military force, continues to ensure access to our economic, political, and security interests overseas. Today there are approximately 48,000 Sailors and Marines deployed on carrier battle groups, amphibious ready groups, and independent deployers such as submarines and maritime patrol aircraft. These "on station" naval forces promote regional stability, deter aggression, and provide the capability for timely response in crises.

If deterrence fails and crisis becomes war, naval forces provide significant combat power. Immediately employable naval forces, simultaneously controlling the seas while projecting power throughout the battlespace, are critical to assuring access for forces arriving from outside the theater, and enabling the transformation to a lighter, more expeditionary Joint force. As the ground-based forces join naval forces already operating forward, the result has to be a joint force that projects offensive power sufficient to serve our national interests. The Navy provides credible combat-ready forces that can sail anywhere, anytime, as powerful manifestations of American sovereignty.

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 will, in turn, 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 Fiscal Year 2002 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, which can counter both the known and the unforeseeable threats to our national security.

Before discussing our shipbuilding programs, one issue needs to be highlighted: the Navy's execution issue of our shipbuilding programs currently under contract, known as Prior Year Completion.

### **COMPLETION OF PRIOR YEAR SHIPBUILDING CONTRACTS**

The funding required to complete construction of ships currently under contract has increased significantly. SCN funding is already insufficient to finance current force structure requirements and prior year completion "bills" exacerbate the issue. Cost growth on ship construction contracts erodes the confidence of Congress in our estimating and budgeting process for future procurements.

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

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

All of these factors, but particularly fiscal constraints, cause the Department to budget procurement programs tightly. The consequences of these factors are that any cost growth or budget reduction causes immediate execution issues. During times of robust ship construction, the Ship Cost Adjustment (SCA) process would allow the Navy and Congress to finance programs, which were experiencing difficulty with those that were performing well. However, the number of new construction ships budgeted each year has decreased from an average of about 20 per year in the 1980's to about 8 per year in the 1990's. In Fiscal Year 2000-2002, the number of new starts has remained stable at only 6 ships per year.

To prevent further increases to the Prior Year completion funding shortfall, the Navy is pursuing the following corrective actions:

- ?? Remedy the systemic issues within our control and incentivize industry partners to do the same.
- ?? Ensure that estimating and budgetary processes better reflect cost risk of factors beyond our control.

The Navy's amended Fiscal Year 2002 President's Budget requests \$800M to address the near term issue. This prior year budget request only addresses funding required to execute the prior year programs during fiscal year 2002. The program execution consequences of receiving funding below the request are very serious and are not in the nation's interest.

### **SHIPBUILDING PROGRAMS**

Our Fiscal Year 2002 budget request calls for construction of 6 ships in Fiscal Year 2002: 3 DDG-51 Class destroyers; one VIRGINIA Class Submarine; one Auxiliary Cargo & Ammunition Ship (T-AKE), and an incrementally funded LHD-8. In addition, we have provided funding for advance procurement of the fifth and sixth VIRGINIA Class submarines, funded advance procurement for the next four ships of the USS SAN ANTONIO (LPD 17) Class, funded service life extension for two Landing Craft Air Cushion (LCAC) craft, and provided funding for two LOS ANGELES Class submarine engineering refueling overhauls which will also receive modernization to enhance combat capability. We have also funded the design start and advance procurement effort to convert two OHIO Class submarines to SSGNs. These submarines provide transformational warfighting capability carrying up to 154 Tomahawk cruise missiles, support sustained deployed special operating forces and sustain our submarine force structure.

#### **ARLEIGH BURKE (DDG 51) Class Destroyer**

The DDG 51 Class guided missile destroyer program remains the Navy's largest surface ship program. The Fiscal Year 2002 budget request includes \$2.97 billion for the procurement of three DDG 51 Class destroyers, which represents one additional DDG over last years budget. The additional DDG 51 will be awarded as a Fiscal Year 2001 option as part of the first Fiscal Year 1998-2001 multi year procurement contract. Exercising this option will provide the most affordable DDG 51 Class destroyer of all the remaining ships in the class procurement. The balance ships are the first funded ships of a new multiyear contract scheduled to be awarded by the end of calendar year 2001. Advanced Procurement funding provided by Congress in Fiscal Year 2001 for Economic Order Quantity buys is being obligated in order to further leverage the stability brought to the shipbuilding industrial base and increase the savings afforded through the multiyear contracting strategy.

The three ARLEIGH BURKE Class destroyers procured in Fiscal Year 2002 will be Flight IIA ships configured with the Baseline 7 Phase I Aegis Combat System, which we introduced on the third ship in Fiscal Year 1998. 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, Area Theater Ballistic Missile Defense, Cooperative Engagement Capability, the 5"/62 gun and a Remote Mine Hunting System capability. Additionally, the DDG 51 destroyers of the Fiscal Year 2002 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 SH-60R helicopter variant.

### Carrier Construction

The ninth ship of the NIMITZ Class, RONALD REAGAN (CVN 76), was christened on March 4, 2001, and launched on March 10, 2001. Ship delivery is planned for March 2003 at Newport News Shipbuilding.

The detailed design and construction contract, including procurement of the integrated warfare system for CVN 77, was awarded to Newport News Shipbuilding on January 26, 2001. 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 CVNX. Primary improvements include a new integrated warfare system incorporating multi-function and volume search radars supported by the next generation ship-self-defense system. Additionally, an open system information architecture will provide improved C4ISR performance. These systems will be the backbone of a highly capable warfare system suite that will also be forward fit to CVNX 1 and CVNX 2. Propulsion plant improvements include centralized electric plant controls and integrated propulsion plant controls. The Fiscal Year 2002 budget request includes RDT&E, N funding of \$36M 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 Newport News Shipbuilding to prove new technologies before installation in the ship.

### VIRGINIA (SSN 774) Class Attack Submarines

Construction on the VIRGINIA, TEXAS, and HAWAII is well underway. The Fiscal Year 2002 budget request includes \$2.3 billion for the fourth ship and advance procurement for the fifth and sixth ships of the VIRGINIA Class. The fourth ship is part of the unique single contract and construction-teaming plan approved by Congress in 1998. This provides a cost effective steady production rate that helps both shipbuilders achieve level manning and more economic material buys. The Navy is currently planning for the next "block buy" of VIRGINIA Class submarines. Various contract strategies, including multiyear procurement and block buy with Economic Order Quantity material purchases are being considered. The VIRGINIA program continues to incorporate warfare improvements as a result of past and on-going R&D

investments. The Fiscal Year 2002 submarine incorporates Advanced Processor Builds for the combat system, which will improve warfighting performance and reliability.

A revised VIRGINIA Class program-funding shortfall was identified earlier this year. The shortfall is the result of lean ship production and was fully realized as the shipbuilders took delivery on much of the ship equipment and material as well as resolved labor disputes. The prices of these items were much higher than defense system procurements inflation rate indices. Other significant factors to the shortfall include design performance, Government Furnished Equipment cost growth and engineering support. The program was no longer able to withstand the fiscal pressures and reductions arising since the program was priced in 1997.

The prior year request for Fiscal Year 2002 covers the immediate needs on the first three submarines. The shortfall on the fourth hull recognized earlier this year has been fully addressed in the Fiscal Year 02 budget.

### SEAWOLF (SSN 21) Class Attack Submarines

The SEAWOLF Class submarine program has delivered the first two ships. Substantial progress has been made on the design and construction modification to the third and final SEAWOLF Class submarine.

USS SEAWOLF (SSN 21) is now conducting her initial deployment. USS CONNECTICUT (SSN 22) completed successfully arctic operational testing. USS CONNECTICUT is now making preparations for a Tomahawk launch test later this year.

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. As part of the December 1999 contract modification, the base ship contract was converted to a Firm Fixed Price contract and is on track for delivery in June 2004.

### STRATEGIC SEALIFT PROGRAM

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. Four ships have or will be delivered ahead of contract schedule by the end of Fiscal Year 2001; USNS MENDONCA, USNS PILILAAU, USNS WATKINS and USNS POMEROY. Avondale and National Steel & Shipbuilding Company are delivering high quality ships, which is a tribute to our industry partners on the Sealift Program.

## SAN ANTONIO (LPD 17) Amphibious Transport Dock Ship

The SAN ANTONIO Class of amphibious transport dock ships represent the Navy and Marine Corps future in amphibious warfare, and is one of the cornerstones in the Department's strategic plan known as "Forward...from the Sea." The 12 ships of the SAN ANTONIO Class will functionally replace four existing 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.

The Fiscal Year 2002 budget request includes \$421 million for Advanced Procurement efforts for the next four ships of this 12-ship program. This funding will stabilize the vendor base and support planning and material procurement to commence construction of the next two ships in Fiscal Year 2003, resulting in construction of these ships on a Fiscal Year 2002 schedule. Providing full funding for two LPD 17 Class ships in Fiscal Year 2002 will not further accelerate the schedule for LPD 21 and LPD 22, since the procurement of material required for construction is already funded. Lead ship construction commenced last summer at Avondale. LPD 19 construction commenced this month at Bath Iron Works. Subsequent to the Fiscal Year 2001 budget review, both the Navy and industry conducted independent assessments of the design progress necessary to support production of the lead ship. These reviews identified a projected additional 14-month adjustment (for a total of 24 months) to the lead ship, resulting in delivery of the LPD 17 in November 2004. We attribute the delay primarily to completion of detail design and translation of that design into detailed production instructions. The design process is proving more difficult and time-consuming than originally estimated; however, this new computer aided design process is yielding a much higher quality product. Production schedules for LPD 18 and follow ships have been adjusted to reflect the delay to the lead ship and to ensure efficient follow ship construction at the respective shipyards.

One of the goals of the LPD 17 program is to achieve a 20 percent cost avoidance in the operating and support costs for this 12-ship class. This goal will be achieved through the application of Integrated Process and Product Development Teams and development of advanced product modeling in the Integrated Product Data Environment. Current estimates of operating and support cost avoidance exceed \$4 billion on the 40 year life cycle of the 12 ship class to date with more initiatives expected before completion of the program.

## Auxiliary Cargo & Ammunition Ship (T-AKE)

The Navy has several supply ships that have been in service for over 30 years. Many of them are steam propulsion system ships whose service lives will expire in Fiscal Year 2007. We plan to replace these aging Ammunition and Dry Stores Ships (T-AEs and T-AFs) with the T-AKE Auxiliary Cargo & Ammunition Ships. The Fiscal Year 2002 budget request includes \$371 million in SCN funding for the third ship of this 12-ship class.

The Navy awarded Phase I contracts to four shipbuilders in August 1999 for cargo-system integration studies for the efficient handling of material within the ship. Contract award



for Phase II, detail design and lead ship construction, is imminent as industry is submitting their “best-and-final” offers for final evaluation. Lead ship delivery is scheduled in Fiscal Year 2005.

### LHD 8 Amphibious Assault ship

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 \$350M - \$420M for this ship over its 40-year estimated service life. The Navy awarded a contract to Litton Ingalls 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. A construction contract award is planned for December 2001. LHD 8 construction will begin in Fiscal Year 2002, accounting for one of the six new construction ships in the President’s budget submission. As approved by Congress, the Fiscal Year 2002 request includes incremental funding of \$267M for LHD 8. When coupled with the previous appropriations, the Fiscal Year 2002 request provides 61% of the total LHD 8 full funding requirement of \$1.82 billion. .

### Future Ship Construction

During the last decade, the focus of maritime warfare operations has necessarily shifted from open ocean, blue-water, sea-superiority roles to execution and support of operations in the littorals. Projecting U.S. maritime power from the sea to influence events ashore directly and decisively is the essence of the Navy and Marine Corps Team’s contribution to national security.

In support of this shift in focus, construction of the SAN ANTONIO Class amphibious transport dock ships and the VIRGINIA Class attack submarines, both of which were designed for the post-Cold War era, is well underway. Additionally, we are in the midst of designing two more platforms, the DD 21 Class destroyer and the next generation aircraft carrier, CVNX. DD 21 will be a multi-mission surface combatant tailored for land attack and maritime dominance while the new CVNX Class carrier will use an evolutionary process for inserting new technologies to enhance war-fighting capability.

### *DD 21 Class Destroyer*

The Fiscal Year 2002 budget request includes \$643M to continue development of the 21st Century land attack destroyer. DD 21 will provide offensive, distributed, and precise firepower at long ranges in support of forces ashore. Entering the fleet as our frigates and DD 963 Class ships retire, DD 21 will sustain required surface combatant force levels.

The Navy has successfully engineered a competitive acquisition strategy for DD 21 that effectively employs industry’s broad resources, expertise, and ingenuity to achieve the requirements of tomorrow’s Fleet. DD 21’s acquisition approach seeks maximum design innovation and flexibility, minimum cycle time from ship design to delivery, and significant cost savings using advanced commercial technologies and non-developmental items. Advanced

design and construction techniques, and an innovative maintenance and support concept will result in reductions in procurement and lifecycle operating and support costs, including significant manning reductions along with improved quality of life for the crew.

DD 21 and her associated technologies represent the future of the surface navy and DD 21 represents the type of change that the greater Navy needs to be an affordable and potent force. DD 21 technologies include advanced weaponry to meet 21<sup>st</sup> century warfighting requirements but also includes the automation needed to fight and survive with reduced manning, the essential key to reducing lifecycle costs for all Navy ships. Examples of these warfighting and affordability technologies include:

- ?? 155mm Advanced Gun System (AGS), which has the range and lethality to meet USMC/JROC requirements for gunfire support for forces ashore.
- ?? Integrated Power System (IPS)/Electric Drive: DD 21 will have all-electric architecture that provides electric power to the total ship (propulsion and ship service). Benefits include reduced operating costs, improved warfighting capability, and architectural flexibility.
- ?? Optimized Manning through Automation: Initiatives, such as advanced system automation, robotics, human centered design methods, and changes in Navy personnel policies allow reduced crew size of 95-150 Sailors while improving quality of life.
- ?? New Radar Suite (Multi-Function Radar (MFR)/Volume Search Radar (VSR)): The radar suite provides DD 21, and other applicable surface combatants, with affordable, high performance radar for ship self-defense against envisioned threats in the littoral environment while reducing manning and life-cycle costs compared to multiple systems that perform these functions today.
- ?? Survivability: Protection concepts that reduce vulnerability to conventional weapons and peacetime accidents under reduced manning conditions are key technologies required for the ship design.
- ?? Stealth: acoustic, magnetic, infrared and radar cross section signatures are markedly reduced compared to the DDG 51 Class and make the ship less susceptible to mine and cruise missile attack in the littoral environment.

The President's Fiscal Year 2002 Budget request sustains the commitment to the DD 21 program and the power projection mission that it represents. The competition, which will determine the contractor responsible for the completion of DD 21 system concept design and the detailed design and construction of the first four DD 21 land attack destroyers, is in source selection. The Navy has temporarily held the completion of source selection in abeyance. The decision was made to allow time for the Department of the Navy to determine if a change in program strategy was warranted based upon the outcome of the ongoing defense reviews.

The Navy remains committed to the objectives and technologies associated with DD 21 and is working closely with the Department of Defense to expedite results from the defense reviews so that source selection may proceed. Until those results are known and the lead ship contract award can proceed, work on key DD 21 technology development continues under our existing contracts with industry. Fiscal Year 2002 R&D funding is critical for the work on key DD 21 systems technology to proceed without impact to the overall program schedule.

## *CVNX*

On June 15, 2000, the Under Secretary of Defense (Acquisition, Technology, and Logistics) granted Milestone I approval for the Navy to proceed with the CVNX program as recommended. The CVNX Program will use an evolutionary, multi-ship process for inserting new technologies that will enhance warfighting, and enable critical features for future flexibility.

CVNX 1, is the next step in the evolution of improved aircraft carriers following CVN 77. Specifically, CVNX 1 will build upon the CVN 77 design, incorporating an improved nuclear propulsion plant, an expanded-capacity and modern electrical generation and distribution system, and an electromagnetic aircraft launch system (EMALS). EMALS is designed to replace the current labor-intensive and much less flexible steam catapult system on carriers today. The new propulsion plant and electric generation and distribution systems will provide immediate war fighting enhancements, improve survivability, produce significant cost and manpower savings, increase quality of life, and provide the critical enabler for future technology insertions. In addition, the new electrical systems will provide needed increased electrical capacity to further improve sortie generation, further reduce total ownership costs, and make possible improvements such as EMALS

The next step in the evolutionary process will be to focus, in CVNX 2, on further improvements in flight deck performance, survivability enhancements, service life allowance, and continued reduction in total ownership costs.

Following Milestone I, the Navy awarded Newport News Shipbuilding the first increment of CVNX 1 design development work. The Fiscal Year 2002 President's Budget request provides funding required to support future CVNX construction in FY2006.

## *JCC (X) Joint Command and Control Ship*

JCC (X) will be the first new afloat command and control capability in over 30 years. 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. An Analysis of Alternatives (AoA) completed in July 2001. The Navy is evaluating the best course of action based on the analysis presented. The Navy plans to replace the four existing command ships with JCC (X) platforms beginning in the 2011 timeframe.

## **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**

We plan to add new mission capabilities and extend the combat system service life of the CG 47 Class cruisers. The Fiscal Year 2002 budget request includes \$177M in all procurement accounts to continue the engineering efforts and procure systems for the first installation, which will occur in Fiscal Year 2005. The upgrade of these ships will add new, and enhance existing combat system capabilities for Theater Ballistic Missile Defense, 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 of approximately 116 surface combatants over the next 20 years.

### **Carrier Maintenance and Modernization**

The Navy provides the maintenance and upgrade of our NIMITZ Class carriers through the Incremental Maintenance Plan (IMP). The IMP includes the mid-life Refueling Complex Overhaul (RCOH) industrial availability. The RCOH is necessary to achieve the full 50-year service life potential of the NIMITZ Class. The RCOH provides the repairs and modernization necessary for reliable ship operations. It also refuels the reactors, supports the NIMITZ-Class IMP and implements Total Ownership Cost reduction initiatives.

The USS NIMITZ (CVN 68) RCOH began in May 1998 and delivery was delivered in June 2001. The ship will transit to the west coast in Fall 2001 with a Post Shakedown Availability scheduled for January 2002.

USS DWIGHT D. EISENHOWER (CVN 69) RCOH began in May 2001 and delivery is expected in April 2004. Our Fiscal Year 2002 budget request of \$ 1,118M completes the EISENHOWER RCOH execution funding profile.

USS CARL VINSON (CVN 70) is in the first year of the four-year advanced planning and procurement RCOH phase. Our Fiscal Year 2002 request of \$74M is in support of its Fiscal Year 2005 RCOH. This investment is vital to the recapitalization of these national assets.

### Landing Craft Air Cushion (LCAC) Service Life Extension Program (SLEP)

LCAC SLEP continues in Fiscal Year 2002 through the award of the first production contract. LCAC 91, the production-representative SLEP craft, was delivered to the Navy in December 2000. 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 30 years. In Fiscal Year 2002, LCAC SLEP is funded at \$41M and will extend the service life of two craft. The SLEP is planned for 74 craft.

### Smartship

Our budget request includes \$35M to fund the procurement of Smartship upgrades for CG 47 Class cruisers in Fiscal Year 2002. Smartship technology consists of automation upgrades to the ship's navigation, machinery controls, and damage control systems and provides an information management network and a condition based maintenance tool for machinery. By eliminating mundane tasks through automation and allowing the crew to concentrate on high priority items, this technology is an enabler for reduced manning. Three Smartship installations are complete and feedback from the Fleet is unequivocally enthusiastic: Smartship is meeting expectations to reduce the workload on our Sailors. One additional Smartship installation is currently underway in Fiscal Year 2001. However, the Navy has restructured the future Smartship installation plan due to the settlement of a dispute with the Smartship installation contractor. The Navy plans to continue Smartship installations in Fiscal Year 2002 but at a reduced rate due to higher than anticipated cost. The budget includes funding for one TICONDERAGA Class cruiser installation and procurement of Land Based Testing Equipment for future Smartship installations on the early flights of DDG 51 Class destroyers. Our budget request for the DDG 51 shipbuilding program continues the forward fit installation of Smartship technologies in the remaining ships of the class.

### Smart Carrier

The Smart Carrier project is a similar initiative to reduce shipboard workload on our carriers through industry standard process reengineering and the insertion of enabling technologies. Like the Smartship program, the goal is to enhance the Sailors' quality of life and lower TOC. Installation of demonstration technologies and implementation of business process reengineering has recently completed USS JOHN C STENNIS with promising results to date. Smart Carrier funding of \$41.4M in Fiscal Year 2002 includes the first full Smart Carrier installation, along with advanced planning and procurement for additional technology insertion.

## Ship Technology Research & Development

The Navy's science and technology efforts are focused on Future Naval Capabilities (FNC), 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 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 S&T program is focused on twelve Future Naval Capabilities:

1. Autonomous Operations
2. Capable Manpower
3. Electric Ships and Combat Vehicles
4. Knowledge Superiority and Assurance
5. Littoral ASW
6. Littoral Combat and Power Projection
7. Missile Defense
8. Organic 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 21 and CVNX 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 21<sup>st</sup> century Sailor range from improved

automation to improved quality of life. The benefits for the 21<sup>st</sup> century Navy are improved life-cycle costs to improved combat performance.

## Submarine Technology

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 Fiscal Year 2002 budget request includes \$111M 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 8th VIRGINIA Class submarine (FY 06) will receive a new advanced composite 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 (Electric Boat and Newport News Shipbuilding) 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 22 design improvements for consideration of which 18 were approved for further development and evaluation. Thirty-nine new technologies are being developed by the submarine community to provide these new capabilities. Additional details of the design improvement will be provided in the Fiscal Year 2001 Design Improvement Report.

Two industry consortia, representing over 50 industry partners, are currently working under a Navy (formerly DARPA) 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. Beginning later in Fiscal Year 2001 these consortia will begin working on actual prototype demonstrations of selected technological concepts in an effort to mature the most promising advances for insertion into the submarine force. Fiscal Year 2002 should see a continuation and expansion of these demonstrations to further develop technologies needed to provide additional capabilities to the submarine Fleet by 2020.

## National Shipbuilding Research Program Advanced Shipbuilding Enterprise NSRP ASE) (formerly MARITECH ASE)

The Navy's National Shipbuilding Research Program Advanced Shipbuilding Enterprise (NSRP ASE) builds on previous efforts initiated under DARPA's MARITECH program (1993-1998). MARITECH was aimed at improving the design and construction processes of

U.S. shipyards. 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 to jointly fund R&D for technologies critical to the Navy's ability to reduce shipbuilding, ship repair and Total Ownership Costs.

## Submarine Force Structure

The Fiscal Year 2002 budget requests \$116M to start design and advance procurement of material for Fiscal Year 2004 induction of two OHIO Class submarines, USS MICHIGAN (SSBN 727) and USS GEORGIA (SSBN 729), for conversion to guided missile submarines (SSGNs). Of the total R&D and SCN budget request, \$106M provides design and procurement of long lead time components for the SSGN and the remaining \$10M SCN request provides Advance Procurement for material for the refueling overhaul. When refueled, these ballistic missile submarines will provide an additional 21 to 23 years of service each. When converted to guided missile submarines (SSGNs), these submarines will fulfill Tomahawk Land Attack Missile and Special Operations Forces requirements currently being met by attack submarines.

The Fiscal Year 2002 budget plans for inactivation of two other OHIO Class ballistic missile submarines (SSBNs), USS OHIO (SSBN 726) and USS FLORIDA (SSBN 728), in Fiscal Year 2003.

The Fiscal Year 2002 budget request also provides funding for refueling two LOS ANGELES-Class submarines. The submarines slated for refueling are the San Diego based USS HOUSTON (SSN 713), scheduled for refueling at Puget Sound Naval Shipyard, and the Pearl Harbor based USS BUFFALO (SSN 715) scheduled for refueling at Pearl Harbor Naval Shipyard. Submarine Engineered Refueling Overhauls (ERO) are major depot level availabilities for LOS ANGELES and OHIO Class submarines accomplished coincident with the mid-point of submarine life. During the ERO, the nuclear reactor is refueled and major ship systems and components are refurbished or replaced to enable continued unrestricted submarine operations. In addition to maintenance, ship alterations are accomplished to ensure the safe and reliable operation of the reactor plant, replace obsolete equipment, accomplish safety modifications, install environmental modifications mandated by law and to modernize the ship to meet mission requirements. Naval shipyards conduct the EROs in a nominal twenty-four month availability.

The Navy is continuing to evaluate how to best apply submarine force structure funds either to support additional SSN refueling overhauls or SSBN conversion to SSGN.

## Naval Surface Fire 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



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 to engage targets between 41 and 63 nautical miles. These weapons, the Naval Fires Control System and a mission planning and execution tool to control their use will be installed on 28 ARLEIGH BURKE (DDG 51) Class destroyers to be delivered between Fiscal Years 2001 and 2009, and on 22 TICONDEROGA Class cruisers selected for modernization between Fiscal Years 2005 and 2011. The Navy is also developing a land attack variant of the Standard Surface to Air Missile. This Land Attack Standard Missile (LASM) program will extend the service life of aging SM-2 Block II/III missiles and convert them for use in the land attack mission. LASM will carry a MK 125 blast fragmenting, unitary warhead with 76 pounds of high explosives to ranges of up to 150 nautical miles. However, these weapons are not intended, or expected, to satisfy the full range of Marine Corps Naval Surface Fire Support requirements.

The second phase, to be completed by 2020, is intended to fully meet Marine Corps requirements. It includes developing a longer range, higher volume, larger caliber Advanced Gun System (AGS) and associated increased lethality munitions, and a longer range, increased lethality Advanced Land Attack Missile for the DD-21 Class Land Attack Destroyer. The Advanced Gun System and associated magazine will be fully automated and be able to deliver 12 precision guided munitions per minute to ranges up to 100 nautical miles. With the delivery of 32 DD-21s and their associated AGS mounts between Fiscal Years 2010 and 2020, the Navy will meet the Marine Corps fire support requirements.

### Shipbuilding Industrial Base

The Navy, in conjunction with the Maritime Administration, defines the primary industrial base for Naval shipbuilding as those U.S. shipyards capable of designing and building large, oceangoing ships over 400 feet in length with a draft of 12 feet or greater. As we began expanding the fleet in 1981, there were 22 shipyards actively constructing large commercial and Navy ships. Shortly after the elimination of the Maritime Administration's construction subsidies for commercial ships in the early 1980's, commercial shipbuilding in U.S. yards virtually collapsed and a declining shipbuilding industry became more dependent on Navy construction.

Since 1990, the Navy's active fleet and the active Navy shipbuilding infrastructure have seen considerable downsizing: from 550 ships to 316 ships today and from 14 shipyards to six shipyards. During the 1980's, the Navy was ordering an average of about 20 ships per year. That average fell to about eight ships per year during the 1990's when the end of the Cold War drew down our force levels and budgets to the levels dictated. As a result of overcapacity, the industry went through several restructuring phases during which these key six

major shipyards were consolidated into three corporations. We view these mergers as positive steps toward right-sizing the shipbuilding industrial base.

Assuming no further infrastructure changes, we expect these shipyards to retain their design and construction capabilities for producing the submarines, surface combatants, amphibious, and auxiliary ships in the Navy shipbuilding plan. However, we are concerned with the dwindling engineering industrial base and the resultant impact on new Navy designs, such as CVNX and DD 21. While industry has collaborated on programs such as the VIRGINIA Class submarine and the SAN ANTONIO Class amphibious transport dock ship, we must pursue collaboration even more vigorously to minimize any impacts on the engineering workforce.

From a facility perspective, all of the six major private shipyards are operating at a fraction of capacity. However, capacity utilization levels will need to increase at most yards to achieve future year procurement rates projected in the 30-Year Shipbuilding Plan Report to Congress submitted in June 2000.

The 30-Year Shipbuilding Plan Report to Congress provided the required shipbuilding procurement rate and ship mix to sustain the present Fleet size. The Fiscal Year 2002 budget request provides for construction of 6 ships. While acknowledging that this is the third consecutive year that the Navy's budget falls short of the procurement rate required to sustain the present force size, the Navy's plan also provides advance procurement funding for the next two VIRGINIA Class submarines, the next four LPD 17 Class Ships, and design start and advance procurement for two SSGNs.

Continuing to procure six ships per year as reflected in the Fiscal Year 2002 budget will have three negative effects. First, it will create a "bow wave" of future-shipbuilding procurement requirements, for which it will be increasingly difficult to allocate scarce procurement account resources. Second, it will create additional stress on Fleet maintenance budgets to sustain the service lives of aging and increasingly obsolescent ships to maintain force structure. Third, the lower shipbuilding rates of this year's budget and the increased shipbuilding rates in future years will create a layoff-hiring cycle within the shipbuilding industry, which will result in increased cost to the Government for future ship construction. This will exacerbate the previously mentioned procurement and maintenance affordability problem and causes further stress to the "top line" of future Navy budgets.

Our shipbuilding plan is barely adequate to sustain the remaining Naval shipbuilding industrial base including the suppliers that provide supporting equipment and associated engineering services. Our 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 four VIRGINIA Class submarines, advance procurement for the Fiscal Year 2002 and Fiscal Year 2003 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. 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.

The Fiscal Year 2002 budget request reflects our continued commitment in Research and Development to achieve the performance and affordability requirements of the DD 21. The DD 21 acquisition strategy focuses the developmental efforts in the two competing shipbuilder's engineering staffs, sustaining the workload for that vital component of the industrial base. The forecast for the production component of the destroyer industrial base is not as encouraging.

As noted in the November 2000 Report to Congress updating the 1993 ARLEIGH BURKE Destroyer Industrial Base Study, both of the destroyer shipbuilders will have to book unprecedented amounts of additional, non-U.S. Navy work in order to maintain their workforces during the transition from DDG 51 to DD 21 production. The report assessment was based on the shipbuilding profile represented in the Fiscal Year 2001 budget submission. However, the cumulative effect of actions taken in the Fiscal Year 2002 budget request including the acceleration of the 58<sup>th</sup> DDG 51 Class ship to Fiscal Year 2002, coupled with Congressional action on the LPD 17 program in Fiscal Year 2001 and the Navy's action in the President's Budget for Fiscal Year 2002, make the industrial base forecast even more challenging than that reflected in the report. The acceleration of the 58<sup>th</sup> DDG 51 Class ship to Fiscal Year 2002 sustains the surface combatant industrial base in the near term but exacerbates the industrial base situation, documented by the Report, between the end of DDG 51 production and beginning of DD 21 production. This situation demands the Navy's attention as we complete the rest of our future year shipbuilding plan. The risks of the destroyer production transition are not confined to the shipbuilding industrial base. Second tier suppliers of shipboard equipment used on destroyers and other warships will also be affected to varying degrees. These effects could range from higher unit costs for associated equipment for other Navy shipbuilding programs to a corporate decision to scale back or stop production. Neither of these consequences is in the best interest of the Navy nor the country. In view of the events that have transpired since the submission of the November 2000 Report to Congress updating the 1993 ARLEIGH BURKE Destroyer Industrial Base Study, the Navy will provide a brief update of the report to the four Defense Committees, which analyzes the effect of the Fiscal Year 2002 shipbuilding budget and a notional future shipbuilding profile on the surface combatant industrial base.

## **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.