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HOUSE ARMED SERVICES COMMITTEE
PROJECTION FORCES SUBCOMMITTEE

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BEFORE THE

PROJECTION FORCES SUBCOMMITTEE

OF THE

HOUSE ARMED SERVICES COMMITTEE

ON

FY 2006 NAVY/MARINE CORPS NAVY R & D IN THE SUPPORT OF THE GWOT

AND FUTURE NAVAL CAPABILITIES

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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 2006 Acquisition and RDT&E programs.

In multiple theaters in the Global War on Terror (GWOT) today, your Navy and Marine Corps Team is involved in a range of operations, from combat ashore to Extended Maritime Interdiction Operations (EMIO) at sea. EMIO serves as a key maritime component of GWOT, and its purpose is to deter, delay and disrupt the movement of terrorists and terrorist-related materials at sea. Your Team has conducted over 2,200 boardings in this last year alone, even as it has flown more than 3,000 sorties while dropping more than 100,000 pounds of ordnance from sea-based tactical aircraft in Iraq; and providing nearly 5,000 hours of dedicated surveillance in and around Iraq to coalition forces.

At the same time, our Nation took advantage of the immediate global access provided by Naval forces to bring time-critical assistance to tsunami victims in South Asia. By seabasing our relief efforts in Operation UNIFIED ASSISTANCE, the ABRAHAM LINCOLN Carrier Strike Group (CSG) and the BONHOMME RICHARD Expeditionary Strike Group (ESG) -- with Marines from the 15th Marine Expeditionary Unit -- delivered more than 6,000,000 pounds of relief supplies and equipment quickly, and with more political acceptance than may have been possible if a larger footprint ashore might have been required.

The Fiscal Year 2006 Budget request maximizes our Nation's return on its investment by positioning us to meet today's challenges -- from peacekeeping/stability operations to GWOT operations and small-scale contingencies -- and by transforming the force for future challenges.

Your Future Navy and Marine Corps Team

We developed the Sea Power 21 vision in support of our National Military Strategy. The objective of Sea Power 21 is to ensure this nation possesses credible combat capability on scene to promote regional stability, to deter aggression throughout the world, to assure access of Joint forces and to fight and win should deterrence fail. Sea Power 21 guides the Navy's transformation from a threat-based platform centric structure to a capabilities-based, fully integrated force. The pillars of Sea Power 21 -- Sea Strike, Sea Shield, and Sea Base -- are integrated by FORCEnet, the means by which the power of sensors, networks, weapons, warriors and platforms are harnessed in a networked combat force. This networked force will provide the strategic agility and persistence necessary to prevail in the continuing GWOT, as well as the speed and overwhelming power to seize the initiative and swiftly defeat any regional peer competitor in Major Combat Operations (MCO).

The Navy and Marine Corps Team of the future must be capabilities-based and threat-oriented. Through agility and persistence, our Navy and Marine Corps Team needs to be poised for the "close-in knife fight" that is the GWOT, able to act immediately to a fleeting target. The challenge is to simultaneously "set the conditions" for a MCO while continuing to fight the GWOT, with the understanding that the capabilities required for the GWOT cannot necessarily be assumed to be a lesser-included case of an MCO. Our force must be the right mix of capabilities that balances persistence and agility with power and speed in order to fight the GWOT while prepared to win a MCO. To do so, it must be properly postured in terms of greater operational availability from platforms that are much more capable as a distributed, networked force. While the fabric of our fighting force will still be the power and speed needed to seize the

initiative and swiftly defeat any regional threat, FORCENet's pervasive awareness (C4ISR) will be more important than mass. And, because of its access from the sea, the Navy and Marine Corps are focusing significant effort and analysis in support of joint combat power projection by leveraging the maneuver space of the oceans through Seabasing. Seabasing is a national capability that will project and sustain naval power and joint forces, assuring joint access by leveraging the operational maneuver of sovereign, distributed and fully networked forces operating globally from the sea, while accelerating expeditionary deployment and employment timelines. The Seabased Navy will be distributed, netted, immediately employable and rapidly deployable, greatly increasing its operational availability through innovative concepts such as, for example, Sea Swap and the Flexible Response Plan. At the same time, innovative transformational platforms under development such as MPF(F), LHA(R) and High-Speed Connectors, will be instrumental to the Sea Base.

To this end, the technological innovations and human-systems integration advances in future warships are critical. Our future warships will sustain operations in forward areas longer, be able to respond more quickly to emerging contingencies, and generate more sorties and simultaneous attacks against greater numbers of multiple aimpoints and targets with greater effect than our current fleet. The future is about the capabilities posture of the fleet. Our analyses is unveiling the type and mix of capabilities of the future fleet and has moved us away from point solutions towards a range of 260 - 325 ships that meet all warfighting requirements and hedges against the uncertainty of alternate futures.

Developing Transformational Joint Seabasing Capabilities

The Naval Power 21 vision defines the capabilities that the 21st Century Navy and Marine Corps Team will deliver. Our overarching transformational operating concept is Sea Basing; a national capability, for projecting and sustaining naval power and joint forces that assures joint access by leveraging the operational maneuver of sovereign, distributed, and networked forces operating globally from the sea. Seabasing unifies our capabilities for projecting offensive power, defensive power, command and control, mobility and sustainment around the world. It will enable commanders to generate high tempo operational maneuver by making use of the sea as a means of gaining and maintaining advantage.

Sea Shield is the projection of layered defensive power. It seeks maritime superiority to assure access, and to project defense overland.

Sea Strike is the projection of precise and persistent offensive power. It leverages persistence, precision, stealth, and new force packaging concepts to increase operational tempo and reach. It includes strikes by air, missiles, and maneuver by Marine Air Ground Task Forces (MAGTF) supported by sea based air and long-range gunfires.

Sea Base is the projection of operational independence. It provides the Joint Force Commander the ability to exploit EMW, and the capability to retain command and control and logistics at mobile, secure locations at sea.

FORCENet is the operational construct and architectural framework for naval warfare in the joint, information age. It integrates warriors, sensors, networks, command and control, platforms and weapons into a networked, distributed combat system.

Sea Trial is the Navy's recently created process for formulating and testing innovative operational concepts, most of which harness advanced technologies and are often combined with new organizational configurations, in pursuit of dramatic improvements in warfighting effectiveness. Sea Trial concept development and experimentation (CD&E) is being conducted in close coordination with, the Marine Corps combat/force development process and reflects a sustained commitment to innovation. These efforts tie warfare innovation to the core operational challenges facing the future joint force.

As a means of accelerating our investment in Naval Power 21, we employ the Naval Capability Development Process (NCDP) and Expeditionary Force Development System (EFDS). The NCDP and EFDS take a concepts-to-capabilities approach to direct investment to achieve future warfighting wholeness. The NCDP takes a sea-based, offensive approach that provides power projection and access with distributed and networked forces featuring unmanned and off-board nodes with penetrating surveillance via pervasive sensing and displaying that rapidly deliver precision effects. The EFDS assesses, analyzes and integrates MAGTF warfighting concepts, and requirements in a Naval and joint context to support the overarching operational concept of Joint Seabasing. Both processes are designed to incorporate innovative products of Service and Joint CD&E and Science and Technology (S&T) efforts.

The Fiscal Year 2006 Budget request reflects the investments that will most improve our warfighting capability by developing and investing in future sea-based and expeditionary capabilities for the Navy and Marine Corps. We will briefly describe innovative concepts that improve our employability then address transformation of our capability pillars by describing some of the key surface and subsurface enablers. We will then highlight the S&T and CD&E developments that ensure continued transformation now and well into the future.

TRANSFORMATION IN OPERATIONAL CONCEPTS

The Department has begun to experiment with innovative operational concepts that seek to improve the employability of naval forces – both those deployed and those ready to surge. The Global Concept of Operations (Global CONOPs) nearly doubles the number of deployable strike groups by 'repackaging' existing formations. The Fleet Response Plan (FRP) modifies maintenance and training practices for Carrier Strike Groups (CSGs) and increases the percentage of time that they are employable – whether forward deployed or ready to surge when needed. The Flexible Deployment Concept allows units that have attained high readiness to embark on deployments of varied duration in support of specific national priorities instead of solely in predictable, lock step, 6-month deployments. This new construct leverages the gains attained from FRP to allow for peacetime deployments that provide "presence with a purpose" or specific warfighting assignments, when necessary.

TRANSFORMATION IN CAPABILITIES

Sea Shield

Littoral Combat Ship (LCS)

LCS will be built from the keel up to be a part of a netted and distributed force. The key warfighting capability of LCS will be its off-board systems: manned helicopters and unmanned aerial, surface and underwater vehicles. It is the off-board vehicles -- with both sensors and weapons -- that will enter the highest threat areas. Its modular design, built to open-systems architecture standards, provides flexibility and a means to rapidly reconfigure mission modules and payloads. Approximately 40% of LCS's payload volume will be reconfigurable. As technology matures, the Navy will not have to buy a new LCS seaframe, but will upgrade the mission modules or the unmanned systems. LCS will be different from any warship that has been built for the U.S. Navy. The program provides the best balance of risk with affordability and speed of construction. We have partnered with the Coast Guard. LCS will share a common three-dimensional radar with U.S. Coast Guard cutters, and in addition, there are other nations interested in purchasing the seaframe.

Two contracts were competitively awarded in May 2004, for detail design and construction of two different LCS Flight 0 seaframes. . Flight 0 is comprised of four ships that will develop and demonstrate several new approaches to Naval warfare including suitability of large-scale modular mission technologies and new operational concepts in the littoral. The detail design and construction of the first LCS flight 0 ship began in Fiscal Year 2005. To date, all milestones have been met on schedule. Detail design for the second ship is ongoing with construction starting in Fiscal Year 2006. The two remaining seaframes for LCS Flight 0 will be requested in Fiscal Year 2007. The LCS spiral development acquisition strategy will support construction of multiple flights of focused mission ships and mission packages with progressive capability improvements. Procurement of the three mission packages (Mine Warfare, Surface Warfare and Anti Submarine Warfare) is also planned in Fiscal Year 2006. The Department is well positioned to proceed with LCS and deliver this needed capability to Sailors as quickly as funding will allow.

VIRGINIA (SSN 774) Class Attack Submarine

The Fiscal Year 2006 Budget request includes \$2.4B for the eighth ship, advance procurement for the ninth and tenth ships of the VIRGINIA Class, and Economic Order Quantity (EOQ) material procurement for the ninth and tenth VIRGINIA Class submarines. There are a total of ten VIRGINIA Class submarines under contract. This year's ship will be the third ship in the five-ship Multi Year Procurement (MYP). This MYP contracting approach provides the Navy savings of \$80M per ship for a total savings of \$400M compared to "block buy" procurement. These ships currently continue to be built under the teaming approach adopted by Congress in 1998, which maintains two capable nuclear submarine shipbuilders at a cost to the Department.

Submarine Technology Development and Insertion

This program is comprised of Advanced Submarine System Development (ASSD) and VIRGINIA Class Technology Insertion RDT&E and SCN funding lines. ASSD develops and demonstrates the most promising submarine transformational technologies for rapid incorporation into fleet units, including combat systems, payloads and sensors. Its focus is Sea Trial and the three warfighting pillars of SEA POWER 21, including capabilities to gain and sustain battle force access, develop and share knowledge, deter conflict, counter weapons of mass destruction and project power with surprise. In addition, the Fiscal Year 2006 Budget request includes \$50M of RDT&E funding to pursue the design of a future Undersea Superiority

system, providing an alternative to the reduced VIRGINIA Class submarine build rate including consideration of alternate propulsion methods. Initial efforts will examine the spectrum of undersea capability areas and trade off the existing and future systems in determining how best to address undersea capability gaps and shortfalls. This program also provides Navy contribution to the joint DARPA/Navy "TANGO BRAVO" initiative to overcome selected technological barriers to enable design options for a reduced-size submarine.

TICONDEROGA (CG 47) Cruiser Modernization Plan

Last year, Congress did not approve the \$179M request for modernization of the TICONDEROGA Class cruisers and rescinded \$56M of unobligated prior year funding. The CG Modernization program has been restructured in Fiscal Year 2006 in accordance with Congressional direction. Under the restructured plan, the older Baseline 2 and 3 ships will be modernized first. Funding begins in Fiscal Year 2006 for long lead-time procurements for a Fiscal Year 2008 Baseline 2 modernization availability of USS BUNKER HILL (CG 52). The Navy's plan will substantially increase the service life and capability of those CG 47 Class ships equipped with the Vertical Launch System. This modernization will reduce combat system and computer maintenance costs, replace obsolete combat systems, and extend mission relevance and service life. It will also incorporate manpower improvements and quality of service enhancements from the smart-ship program.

DDG Modernization

The Fiscal Year 2006 Budget request includes \$29M across several appropriations to begin the process to bring needed mid-life DDG modernization enhancements to the mainstay of our surface fleet. DDG 51 is scheduled to be the first legacy destroyer to receive the modernization upgrade in Fiscal Year 2010.

ARLEIGH BURKE (DDG 51) Class Destroyer

The Fiscal Year 2006 Budget request includes \$225M to begin funding program completion and shutdown costs. All 62 ships have been contracted for and the final ship will deliver in Fiscal Year 2011.

Multi-mission Maritime Aircraft (MMA)/P-3C

The future for the Navy's maritime patrol force includes plans for sustainment, modernization, and re-capitalization of the force. Results of the P-3 Service Life Assessment Program (SLAP) have revealed the need for an aggressive approach to P-3 airframe sustainment. Key elements of the sustainment plan are strict management of requirements and flight hour use, special structural inspections to keep the aircraft safely flying, and increased use of simulators to satisfy training requirements. The Fiscal Year 2006 Budget request reflects \$74.5M for Special Structural Inspections (SSI) and Special Structural Inspections - Kits (SSI-K), which will allow for sustainment and continued operation of approximately 166 aircraft. As the sustainment plan progresses, the inventory may be further reduced to a number approaching 130 aircraft. The Fiscal Year 2006 Budget request also reflects a modernization budget of \$51.3M for continued procurement and installation of the USQ-78B acoustic processor and for completion of final installations of Anti-Surface Warfare Improvement Program (AIP) kits. We are working on plans for further mission system modernization to allow us to continue meeting COCOM

requirements. To recapitalize these critical aircraft, the Navy is procuring a MMA. The MMA program entered System Development and Demonstration (SDD) phase in May 2004 and awarded a contract to the Boeing Corporation for a 737 commercial derivative aircraft. The Fiscal Year 2006 Budget requests \$964.1M for continuation of MMA SDD. Our comprehensive and balanced approach has allowed for re-capitalization of these critical assets.

MH-60R and MH-60S

The Fiscal Year 2006 Budget requests \$655.5M in procurement and \$48.1M in RDT&E for the replacement of the Light Airborne Multi-Purpose System (LAMPS) MK III SH-60B and carrier-based SH-60F helicopters with the new configuration designated as MH-60R. The procurement quantity was reduced to provide an orderly production ramp. A Full Rate Production decision is scheduled during the second quarter of Fiscal Year 2006. The Fiscal Year 2006 Budget requests \$608.7M in procurement and \$78.6M in RDT&E funds for the MH-60S, which is the Navy's primary combat support helicopter designed to support Carrier and Expeditionary Strike Groups. It will replace four legacy platforms with a newly manufactured H-60 airframe. The MH-60S is currently in the full rate five-year MYP contract with the Army. The Army and Navy intend to execute another platform MYP contract commencing in Fiscal Year 2007. Navy's total procurement requirement was increased from 237 to 271 to provide a force structure that supports the Navy-approved Helicopter concept of operations.

Missile Defense

A viable sea based ballistic missile defense system is essential in ensuring the safety of U.S. forces and their flow through foreign ports and airfields as required. Sea based missile defense will also enable us to assist allies and friends in deterring coercion and threats. Since November 2002, Aegis Ballistic Missile Defense (ABMD) had two successful intercepts in Flight Mission 4 and Flight Mission 6. Five SM-3 Block 1 engineering rounds have currently been delivered and the SM-3 Block 1A Critical Design Review was held in October 2004. Block 1A deliveries are scheduled to take place in 2006.

Standard Missile

The Fiscal Year 2006 President's Budget requests \$127M for Standard Missile-6 (SM-6). SM-6, the Extended Range Active Missile (ERAM), provides a transformational enabler to the U.S. Navy revolutionizing Naval warfare. Combining an AMRAAM active seeker onto the proven Standard Missile airframe, SM-6 provides an extended range anti-air warfare capability both over sea and over land. This low-risk approach relying on Non-Developmental Items will support a Fiscal Year 2010 IOC. With integrated fire control, SM-6 will provide the surface Navy increased battlespace against AAW threats over-the-horizon, taking full advantage of the kinematics available in Standard Missile. SM-6 was designated an ACAT 1D program after completing a Milestone B Decision Meeting on June 15, 2004. Three months later, a System Development and Demonstration contract with cost and technical/schedule performance incentives was successfully awarded. Low Rate Initial Production is scheduled for Fiscal Year 2009.

Self Defense Test Ship (SDTS)

Range safety issues prevent live fire testing of ship self defense systems involving manned civilian or Fleet assets. The SDTS is a ship that is unmanned and remotely controlled for safe live-fire testing of ship self defense systems inside the safety region. These tests are not allowed against a manned ship due to range safety limitations. The SDTS provides essential combat system and element level testing in an at-sea environment, close in, against representative targets. Since becoming operational in October 1994, the ex-USS DECATUR has tested systems such as Rolling Airframe Missile Block 1, Close-In Weapon System Block 1A and 1B, Ship Self Defense System, NATO Seasparrow Missile System, and the Evolved Sea Sparrow Missile. The schedule and cost savings of commissioned warship time and manpower has been substantial to date. Recently, the ex-USS DECATUR was replaced by ex-USS PAUL F. FOSTER as the Self Defense Test Ship Replacement (SDTS-R). The SDTS-R is currently under conversion and will be available for testing in the 2nd quarter of Fiscal Year 2006. The Fiscal Year 2006 President's Budget requests \$7.1M to support the SDTS-R to provide the Navy with an unmanned, at-sea self defense weapons test and evaluation platform.

Ship Self-Defense System (SSDS)

The Fiscal Year 2006 President's Budget requests \$40.5M to complete the Follow-On Test and Evaluation (FOT&E) in USS SAN ANTONIO (LPD 17) and begin live fire testing in the SDTS. The SSDS is designed to expedite the detect-through-engage process for amphibious ships and aircraft carriers against anti-ship cruise missiles (ASCMs). SSDS consists of a combination of software and commercial off-the-shelf hardware intended to integrate sensor and engagement systems. Progress during Fiscal Year 2004 focused on the industry formal qualification tests of the SSDS MK 2 system and the delivery and test of the system in USS REAGAN, CVN 76. SSDS MK2 is implementing open architecture to enable sharing of common command systems applications across the surface fleet.

Rolling Airframe Missile (RAM)

The RAM program provides surface ships with a low-cost, lightweight, self-defense system with which to defeat ASCMs. The United States and the Federal Republic of Germany jointly developed and support RAM. Combined Developmental Test/Operational Test (DT/OT) began in June 2003, and extended into Fiscal Year 2004, using the existing SDTS to ensure operationally realistic tests for determining that RAM with the new helicopter-air-surface software retained capability against ASCMs and to carry out follow-on testing from the Fiscal Year 1999 operational evaluation. The Fiscal Year 2006 President's Budget requests \$86.9M to procure 90 Block 1 missiles and 200 ordnance alteration kits. Risk reduction efforts commenced in Fiscal Year 2005 for the spiral development kinematic upgrade of the RAM missile with the intention of beginning System Development and Demonstration in Fiscal Year 2006.

Evolved Sea Sparrow Missile (ESSM)

The ESSM is a kinematic and extended range all weather upgrade to the RIM-7 Sea Sparrow missile which provides self-protection for surface ships against current and future ASCM threats. It was developed to balance total system effectiveness and extend the battle space against the low-altitude and supersonic ASCM threat. ESSM is an international cooperative development and production effort that includes 10 participating governments. By the end of Fiscal Year

2005, ESSM will be in service in six of the 10 participating governments including the U.S. The Fiscal Year 2006 President's Budget requests \$99.8M to procure 116 missiles.

Scaled Improved Performance Sonar (SIPS) and AN/SQQ-89A(V)15

The Fiscal Year 2006 President's Budget requests \$25.5M to procure upgrade kits to modernize the under sea warfare (USW) capability on DDG51 Class ships. The Scaled Improved Performance Sonar (SIPS) adjunct upgrade will provide quick, affordable and measurable near term active and passive performance enhancements to the existing AN/SQQ-89(V) Surface USW Combat System via a ship alteration. SIPS brings to the Fleet improvements in torpedo defense, reduction in false contact rate, reduced clutter, new active waveforms to improve littoral capability, and passive improvements in signal processing and operator displays. The President's budget request for SIPS builds upon Congressional adds in Fiscal Year 2004 and 2005 for AN/SQQ-89 Modernization and Surface Ship ASW Improvements that have resulted in the successful deployment of SIPS TEMPALTS in the Fleet. The AN/SQQ-89A(V)15 upgrade will integrate into DDG51 Class FLT IIA (DDG79 and onward) ships a new tactical Multi Function Towed Array. It will also provide a commercial off-the-shelf (COTS) based open architecture USW combat system with the capability for mid-frequency bi-static and multi-static sonar operations. The A(V)15 upgrade is also programmed for installation in Baseline III and IV CG-47 Class ships as part of the Cruiser Modernization Program. The AN/SQQ-89A(V)15 production prototype was installed on CG-73 in Fiscal Year 2004.

Advanced Processing Build (APB)

The APB process produces hardware independent software builds to create or improve functionality for transition to submarine combat systems programs. The primary recipients of the APB's are the AN/BQQ-10 Acoustic Rapid Commercial Off-the-Shelf Insertion program and the AN/BYG-1 Combat Control Systems program. Annual software deliveries were made in support of submarine modernization. APB's also provide functionality to the Integrated Undersea Surveillance System program as well as other surface, air, and surveillance programs. The software enhancements are produced via a four-step evolutionary process that involves Navy laboratories, academia, and small and large businesses.

The Fiscal Year 2006 President's Budget requests \$62.23M for Submarine Combat System Improvement within which APBs are allocated \$48.23M to continue development and transition of APBs for Submarine Combat System Improvements. Recent APB-Acoustics improvements have focused on close aboard situational awareness, precision underwater mapping, sonar planning and environmental monitoring, acoustic contact correlation and integration with tactical control, and processing enhancements for the hull and sphere arrays. These enhancements will continue to be refined over the near term in concert with a special focus on expanding High Frequency Active close aboard capabilities. Future near term efforts will focus on improving the acoustic contribution to ASW in the littorals. Primary candidates are thin-line towed array signal processing, precision tracking and refined automation. Recent APB - Tactical efforts focused on delivery of the first automated close encounter management tool-set for submarine combatants. Future near term efforts will focus on enhancing this functionality and on improving the tactical commander's ability to manage close in and high density scenarios through advanced target motion analysis, contact management, tactical scene rendering, sensor performance prediction

models, search planning, uncertainty management, acoustic and non-acoustic vulnerability management, close encounter decision management, and automation.

Advanced Deployable System (ADS)

The ADS utilizes an off board distributed sensor field to detect submarines. This capability will be deployed initially from LCS as a component of the LCS littoral anti submarine warfare capability. Testing of the ADS array performance has been completed and preliminary demonstrations of data transmission have also been completed. This year's efforts will focus on demonstration of array deployment.

Organic Mine Countermeasures

The Fiscal Year 2006 Budget requests RDT&E and procurement funding for a variety of airborne mine countermeasure systems, which will be employed by the MH-60S helicopter as an organic capability within the Navy's strike groups. Specific systems are:

- The AN/AQS-20A Advanced Mine Hunting Sonar and the Airborne Mine Neutralization System (AMNS) are being developed to counter deep moored mines and visible bottom mines. The Navy is requesting \$3.4M for the AN/AQS-20A to complete system developmental testing, initiate and complete operational testing and award a contract for six AN/AQS-20A systems. For AMNS, the Navy is requesting \$7.7M to conduct contractor testing, complete system developmental testing and to reach Milestone C.
- The AN/AES-1 Airborne Laser Mine Detection System (ALMDS) and the AN/AWS-2 Rapid Airborne Mine Clearance System (RAMICS) are being developed to counter near surface and floating mines. The Navy is requesting \$5.9M in OPN for four ALMDS units in addition to the four LRIP units purchased in Fiscal Years 2005. For RAMICS, the Navy is requesting \$16.2M to complete contractor testing and to begin developmental testing.
- The Organic Airborne and Surface Influence Sweep (OASIS) System will ensure the Navy will maintain an assured access capability and counter influence mines that may not be found using other mine hunting systems. The Navy is requesting \$13.9M for the completion of developmental and operational testing leading to LRIP buys in Fiscal Year 2007.
- The Remote Mine Hunting System (RMS) is being developed as an unmanned semi-submersible vehicle to deploy from both the DDG-51 Class (hulls 91-96) and the LCS. This system will provide an over-the-horizon organic mine hunting capability to ensure our combatants stay free of mine danger areas. We are also exploring the multi-mission potential of the RMS vehicle (which is the Remote Mine-hunting Vehicle (RMV)) as one of the systems for our LCS, ASW mission module package. The Fiscal Year 2006 Budget request for OPN for RMS is \$85M for four RMS systems and \$34.2M for RMV ASW mission package (four vehicles).

Sea Strike

DD(X) Destroyer

DD(X) is the centerpiece of a surface combatant family of ships that will deliver a broad range of capabilities. It is already providing the baseline for spiral development of technology and engineering to support a range of future ship classes such as CG(X), LHA(R) and CVN-21. This advanced multi-mission destroyer will bring revolutionary improvements to precise time-critical strike and joint fires for our Expeditionary and Carrier Strike Groups of the future. It expands the battlespace by over 400%; has the radar cross section of a fishing boat; and is as quiet as a LOS ANGELES Class submarine. DD(X) will also enable the transformation of our operations ashore. Its on-demand, persistent, time-critical strike revolutionizes our joint fire support and ground maneuver concepts of operation so that our strike fighter aircraft are freed for more difficult targets at greater ranges. DD(X) will provide credible forward presence while operating independently or as an integral part of naval, joint, or combined expeditionary forces.

The Fiscal Year 2006 Budget request includes \$1.1B in RDT&E for continued technology development and \$716M in SCN advance procurement funds for the first and second DD(X). DD(X) will dramatically improve naval surface fire support capabilities available for joint and coalition forces. Planned technologies, such as integrated power system and total ship computing environment in an open architecture, will provide more affordable future ship classes in terms of both construction and operation. DD(X) will be the first forward-fit surface combatant with an open architecture combat system. This investment will be leveraged to other surface ship procurements, including CVN 21 and LHA(R).

The FYDP includes full funding for the first DD(X) in Fiscal Year 2007 and construction of one ship per year in each follow on year. DD(X) will provide the hull form and propulsion for the future generation of surface combatants that provide an array of 21st Century Naval capabilities.

SSGN

The Fiscal Year 2006 Budget requests \$286M of procurement funding for the conversion of the fourth and final submarine to be converted to SSGN. When completed, these submarines will provide transformational warfighting capability carrying up to 154 Tomahawk cruise missiles and support deployed special operating forces. The four SSGN conversions are being executed utilizing a public-private partnership conducting the work in Naval Shipyards, and are scheduled for delivery by Fiscal Year 2007. The Navy has experienced minor scope changes as we have refueled and converted these submarines. The Navy is working to resolve these issues, but any changes are difficult to address with the rules and constraints of short duration modifications relying on procurement funds.

Tactical Tomahawk (TACTOM)

The Fiscal Year 2006 Budget supports the Navy's commitment to replenish our precision-guided munitions inventories utilizing the Navy's first MYP contract for a weapon. TACTOM entered Full Rate Production in August 2004. We completed our second and final remanufacture program, converting all available older Tomahawk airframes to the latest Block III configuration. The Firm Fixed Price five year contract (Fiscal Years 2004 - 2008) for TACTOM will save the taxpayer ~12 % over annual procurements. TACTOM's advanced design and

manufacturing processes have cut procurement cost to \$729K or half the cost of a Block III missile and maintenance costs by half of the cost of its predecessor. TACTOM provides a more capable missile with a 15-year product warranty and a 15-year recertification interval. This approach mitigates price growth of follow-on procurements by providing incentive for the contractor to manage for obsolescence, which will control future price growth on follow procurements.

Expeditionary Fighting Vehicle (EFV)

The EFV remains the Marine Corps' number one ground acquisition priority and will join the MV-22 and the LCAC as an integral component of the triad required for executing Expeditionary Maneuver Warfare. The EFV is a self-deploying, high water speed, armored amphibious vehicle capable of transporting Marines from ships located beyond the horizon to inland objectives. It will be the primary means of tactical mobility for the Marine rifle squad during expeditionary operations. This vehicle will replace the Assault Amphibious Vehicle (AAV7A1) that was fielded in 1972 and that will be over 35 years old when the EFV is fielded. The Milestone C LRIP is now scheduled for September 2006. The approved acquisition objective is for 1,013 vehicles. Initial operational capability is scheduled for Fiscal Year 2010 and full operational capability is scheduled for Fiscal Year 2020. The Fiscal Year 2006 RDT&E Budget requests \$253.7M to continue a robust developmental test program, to conduct a comprehensive operational assessment, to develop the LRIP vehicle design, and to develop logistics products including integrated electronic technical manuals and training devices, simulators and courseware.

Lightweight LW-155 Howitzer (M 777A1)

The M 777A1 is a Joint USMC/Army 155mm towed artillery system that will replace the current M198. The Marine Corps intends to procure a total of 356 howitzers with IOC in Fiscal Year 2005. The M 777A1 is currently finishing LRIP for the Marine Corps and the Fiscal Year 2006 Budget request includes \$178.4M to procure 77 systems. The DON and the Army plan to award a multi-year contract in March 2005. The M777A1 will be able to fire the Excalibur PGM, currently under development by the Army to support enhanced range requirements for Joint indirect fires.

Sea Base

LPD 17

The SAN ANTONIO (LPD 17) Class of amphibious transport dock ships is optimized for operational flexibility and designed to meet Marine Air-Ground Task Force lift requirements and represents a critical element of the Navy and Marine Corps future in expeditionary warfare. The Fiscal Year 2006 Budget includes \$1.3B to fully fund the construction of the eighth ship of the class. The Navy plans to build nine LPD 17 ships with the procurement of the ninth ship planned for Fiscal Year 2007. The lead ship is approximately 93 percent complete with delivery scheduled for summer 2005. In addition to the lead ship, four follow on ships are currently under construction. NEW ORLEANS LPD 18 was christened on November 20, 2004, and MESA VERDE LPD 19 was christened January 15, 2005. Construction also continues on

GREEN BAY LPD 20 and NEW YORK LPD 21. Advance procurement contracts for LPD 22 and 23 have been awarded to support long-lead time material purchases for these ships.

LEWIS and CLARK Class Auxiliary Dry Cargo Ammunition Ship (T-AKE)

The Fiscal Year 2006 Budget request includes \$380M for the ninth ship. The first eight ships have are under contract. Exercise of the option for the seventh and eighth ships occurred in January 2005. Lead ship construction commenced in September 2003, with a projected delivery date of January 2006. Projected delivery dates for the other ships are as follows: second ship Fiscal Year 2006; third, fourth and fifth ships Fiscal Year 2007; sixth and seventh ships Fiscal Year 2008 and the eighth ship Fiscal Year 2009.

CVN 21 Class

The CVN 21 program is designing the aircraft carrier for the 21st Century, as the replacement for the NIMITZ Class nuclear aircraft carriers. Overall, CVN 21 will increase sortie generation rate and increase survivability to better handle future threats. The new design nuclear propulsion plant and improved electric plant together provide three times the electrical generation capacity of a NIMITZ Class carrier. This capacity allows for the introduction of new systems such as Electromagnetic Aircraft Launching System, advanced arresting gear, and a new integrated warfare system that will leverage advances in open systems architecture to be affordably upgraded. Other features include an enhanced flight deck, improved weapons handling and aircraft servicing efficiency, and a flexible island arrangement allowing for future technology insertion.

The Fiscal Year 2006 Budget request includes \$565M of advance procurement for continued development of CVN 21. The program received Milestone B approval in April 2004. The construction contract is scheduled for award in Fiscal Year 2008, with ship delivery in Fiscal Year 2015.

NIMITZ Class (CVN 68 Class)

The Refueling Complex Overhaul (RCOH) program refuels, repairs, and modernizes NIMITZ Class aircraft carriers to provide up to 50 years of service life. CVN 68 Class was originally based on a 30-year design life with refueling at an estimated 14 years. Ongoing analysis of the reactor cores show a nominal 23 year life prior to requirement to refuel allowing the RCOH schedule to be adjusted accordingly. The RCOH Program recapitalizes these ships in lieu of procurement and is fundamental to sustaining the nuclear carrier force structure. RCOHs provide a bridge between maintaining current readiness requirements and preparing the platform for future readiness initiatives in support of Sea Power 21. They leverage technologies from other programs and platforms that support RCOH planning and production schedules for advantageous insertion during this major recapitalization effort.

In 2004, considerable progress was made on the EISENHOWER (CVN 69) RCOH. Restructuring of the contract in December 2003, reset target cost and fee, established performance incentives, reduced minimum fee, modified shareline ratios, and extended the RCOH duration by 11 weeks. Since the contract restructuring, the shipyard's performance improved considerably, resulting in an estimated \$29M underrun at completion. This underrun has allowed the "buy back" of work that was previously descope to avoid contract cost

overruns. Significant work items reinstated included the refurbishment of the forward crew galley and 03 level ward room, embarked Flag officer spaces habitability upgrades, installation of several refurbished antennas, and combat systems electronic upgrades. Delivery of EISENHOWER back to the Fleet is scheduled for 2005.

The Fiscal Year 2006 Budget request includes \$1.5B in the first of two funding increments for the USS CARL VINSON RCOH. The Fiscal Year 2006 Budget also includes \$20M in advance procurement funding for the USS THEODORE ROOSEVELT (CVN 71) RCOH scheduled to start Fiscal Year 2010.

Maritime Prepositioning Force (Future) (MPF(F))

These future Maritime Prepositioning Ships will serve a broader operational function than current prepositioned ships, creating greatly expanded operational flexibility and effectiveness. We envision a force that will enhance the responsiveness of the joint team by the at-sea assembly of a Marine Expeditionary Brigade that arrives by high-speed airlift or sealift from the United States or forward operating locations or bases. The MPF(F) will support the forcible entry. These ships will off-load forces, weapons and supplies selectively while remaining far over the horizon, and they will reconstitute ground maneuver forces aboard ship after completing assaults deep inland. They will sustain in-theater logistics, communications and medical capabilities for the joint force for extended periods as well.

The Fiscal Year 2006 Budget request includes \$66M of RDT&E funds to develop technologies to support future sea basing needs in MPF(F). The first MPF(F) ship is planned for Fiscal Year 2009 with advanced procurement award scheduled in Fiscal Year 2008. It is critical to the Nation's Naval capabilities and our shipbuilding industrial base that we proceed with MPF(F) definition and experimentation efforts and maintain a fully funded MPF(F) program.

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

Our fleet LCACs saw dramatically increased operational tempo supporting worldwide operations during the past year, underscoring the need for the LCAC SLEP. SLEP is a vital, ongoing effort to OMFTS and STOM options for the Naval forces. This will provide continued critical surface lift for the Marine Corps for the future as these upgrades offer greater flexibility and endurance options that allow Naval forces to continue to remain expeditionary and versatile in support of GWOT and into the future. The program, designed to extend the service life of LCACs to 30 years, had several notable accomplishments during the past year: LCAC 2 and LCAC 4 delivered ahead of schedule. The award of the Fiscal Year 2004 contract for four craft occurred in March 2004. In 2004, the SLEP effort received a DoD Value Engineering Award for the revised acquisition strategy that will deliver the required LCAC capability and service life while providing a cost savings of \$104M through the FYDP for the program. The first SLEP craft, LCAC 44, rendered assistance to tsunami victims in Indonesia as part of Operation UNIFIED ASSISTANCE. The Navy is continuing the strategy of refurbishing vice replacing the buoyancy boxes and will competitively select the Fiscal Year 2005 and Fiscal Year 2006 SLEP work. The Fiscal Year 2006 Budget request includes \$111M for SLEP of six craft.

LHD 8

The MAKIN ISLAND (LHD 8) last ship of the LHD 1 Class of big deck amphibious ships represents a critical element of the Navy and Marine Corps future in expeditionary warfare. LHD 1 Class platforms provide critical lift and an expeditionary capability allowing rapid Naval Force response to differing crises. Offering the Joint Force Commander (JFC) a variety of options, LHD 1 Class platforms are critical power projection and C4ISR platforms capable of embarking JFC staffs. The flexibility and versatility of the LHD 8 in Seabasing circumvents the challenges on obtaining land-basing privileges and over flight permissions in support of U.S. GWOT missions. In accordance with Congressional direction to incrementally fund LHD 8, the Fiscal Year 2006 Budget requests \$198M for the last increment in the continued construction of LHD 8. LHD 8 will be the first big deck amphibious ship that will be powered by gas turbine propulsion, and all of its auxiliary systems will rely on electrical power rather than steam. This change is expected to realize significant lifecycle cost savings. Ship construction is proceeding as scheduled with a contract delivery date of Summer 2007.

LHA(R)

The Fiscal Year 2006 Budget requests \$150M of advance procurement funds for LHA(R) that support an accelerated ship construction start in Fiscal Year 2007. LHA(R) is the replacement program for four aging LHA Class ships that reach the end of their administratively extended service life between 2011 and 2015. LHA(R) Flight 0 is a modified LHD 1 Class variant with improved aviation capabilities designed to accommodate aircraft in the future Marine Corps Air Combat Element including JSF and MV-22 and provides adequate service life for future growth.

Joint High Speed Vessel (JHSV)

The Navy High Speed Connector has been merged with the Army Theater Support Vessel to form the JHSV program. This program will provide a high-speed intra-theater surface lift capability gap identified to implement Sea Power 21 and the Army Future Force operational concepts. The JHSV will be capable of supporting Joint Force needs for flexible, fast transport of troops and equipment for the future. Today's only alternative to meeting this gap is through the leasing of high speed vessels for rapid troop and equipment transport is airlift. The WestPac Express is a high-speed surface vessel currently being leased by the Military Sealift Command and used to transport Marines in the Western Pacific operating area. With the Navy designated as the lead Service, the Navy, Marine Corps and Army are working together to develop the required documentation to meet a Milestone A decision in February 2006 with a lead ship contract award planned for Fiscal Year 2008.

Cobra Judy Replacement

The Cobra Judy Replacement ship acquisition is tailored to meet the Cobra Judy Replacement mission requirements and will be built to commercial shipbuilding standards. The mission equipment interface requirements are incorporated in the industry Request for Proposal. The contract, planned for award in Fiscal Year 2005, will focus primarily on the ship concept preliminary design phases. The ship production contract is planned for Fiscal Year 2006 award. The Program completed the System Design Review for the radars and other mission equipment to replace the aging Cobra Judy surveillance platform. The Program leverages Navy, Missile Defense Agency, and other investments in radar technology to acquire this essential National

capability while demonstrating solid-state phased array radar technology needed for the Navy's future cruiser, CG(X).

Surface Combatant Combat System Open Architecture (OA)

The Fiscal Year 2006 President's Budget request includes \$197.9M for OA. Implementing OA business and technical precepts and standards will increase our rate of innovation to implement capability upgrades and will ensure interoperability through modular acquisition processes, the use of widely accepted commercial standards, COTS technology, and component-level software reuse. Each domain lead (Surface, Air, Subsurface, C4I, and Space) is responsible for implementation of OA business and technical precepts within their programs. Our Program Executive Office for Integrated Warfare Systems leads the effort to identify, assess, and distribute OA business and technical "best practices" in the areas of modularity, interoperability, reuse and affordability across the enterprise domains. This approach is a fundamental enabler to achieving the precepts behind FORCENet and is the key to affordable 21st Century Naval and Joint combat capability.

Command, Control and Net-Centric Capabilities

Deployable Joint Command and Control

The DJC2 system is one of SECDEF's three top transformational initiatives to equip Combatant Commanders with a scalable, standardized joint C2 system that can be deployed on short notice. This Navy led effort serves as an example that rapid acquisition is achievable. DJC2 was required to deliver an IOC within 18 months of program start and we remain on schedule.

Joint Tactical Radio System (JTRS)

We are working with the Air Force to successfully converge development of Navy and Air Force versions of JTRS (JTRS-AMF) to provide a common acquisition approach. Closely coupled with the JTRS Program and building on the initial Multi-functional Information Distribution System (MIDS), we have developed a promising joint effort with the Air Force that will significantly improve interoperability to the cockpit and maintain alignment with our tactical radio transition to the JTRS environment. This effort also has four international partners who are paying participants in the program.

NetCentric Enterprise Solutions for Interoperability (NESI)

The Navy has also partnered with the Air Force to effectively and efficiently standardize the way we develop software for our joint C4I systems. The NESI is developing a common set of software standards and implementing processes designed to build portable and reusable software for our C4I systems. This effort has implications for our FORCENet initiatives that we have underway that the Navy Space System Command and my Chief Engineer are spearheading. Our Space and Naval Warfare (SPAWAR) Systems Command is the FORCENet Chief Engineer, building a data-base which we refer to as the FORCENet Integrated Baseline. Near-term goals will be to use this database to understand our gaps and overlaps in C4ISR programs with the goal of eliminating those overlaps and assess how our acquisition efforts will fill the gaps. A

FORCENet acquisition policy will be promulgated in April that will provide guidance to the Navy enterprise on FORCENet compliance. We are also exploring the concept of a Lead Systems Integrator to promote increased C4I program integration efficiencies by focusing the government on acquisition and moving true engineering tasks to industry.

Cooperative Engagement Capability (CEC)

The Fiscal Year 2006 President's Budget requests \$88.1M for continued development of the Navy's CEC. CEC provides a significant step forward in transforming our situational awareness of the battlespace. CEC's successful completion of OPEVAL allows implementation of this capability within the fleet and is a major step in developing a network-centric force. The CEC program has been restructured to achieve alignment with the Navy's OA plans as well as to meet forthcoming requirements from the Joint Single Integrated Air Picture Systems Engineering Organization (JSSEO). A revised acquisition strategy reflecting this restructured approach was approved August 18, 2004. This revision included the implementation of a pre-planned product improvement (P3I) approach to modify the current equipment to meet reduced size, weight, cost power and cooling objectives. The P3I approach will also implement the existing Navy design objective with regard to open systems, interoperability and program protection. By the end of Fiscal Year 2006 a total of 40 shipboard and 5 squadrons will be equipped with CEC. The Fiscal Year 2006 Budget request \$40.3 million to procure 5 additional CEC systems. The acquisition strategy also outlines the implementation of a single-track management solution set for Navy systems that will incorporate the IABM from JSSEO. This will maximize the potential for Joint interoperability across the battlespace. We are currently in the process of competitively selecting a System Integrator/Design Agent to implement the developed track management solution set across the Fleet.

Distributed Common Ground System – Navy (DCGS-N)

A further step forward in network-centric warfare and one of the Navy's transformational initiatives is DCGS-N. In January 2004, the Navy combined the Joint Service Imagery Processing System – Navy with the Joint Fires Network into DCGS-N. These programs were combined organizationally, programmatically, and technically. The Fiscal Year 2006 Budget request includes \$12.4M for continued DCGS-N development. This capability merges ISR, targeting and command and control systems into a coherent architecture to improve situational awareness, fires and time-sensitive targeting. It serves as a building block for the Navy's more extensive FORCENet concept.

Unmanned Aerial Vehicles (UAV)

The GWOT continues to place emphasis on the importance of UAVs. The Fiscal Year 2006 Budget request reflects our commitment to a focused array of UAVs that will support and enhance both surveillance and strike missions with persistent, distributed, netted sensors.

Fire Scout UAV

The Fiscal Year 2006 Budget requests \$77.6M to continue development of the Fire Scout UAV. The Fire Scout is a Vertical Takeoff and Landing Tactical UAV (VTUAV) designed to operate from all air-capable ships, carry modular mission payloads, and operate using the Tactical Control System and Tactical Common Data Link. The Fire Scout UAV will provide day/night

real time ISR and Targeting as well as communication-relay and battlefield management capabilities to support core Littoral Combat Ship (LCS) mission areas of ASW, MIW and ASUW for the Naval forces. Upgrades will include a four-bladed rotor and increased payload capacity. Upgraded Fire Scout capability will be fielded with LCS Flt 0.

The Army has selected the Fire Scout for their Army Future Combat System Class IV UAV. Numerous similarities in hardware components, testing, logistics, training, software and support requirements, offer potential for overall program cost reduction which would clearly benefit both the Army and Navy. We expect to sign a MOA with the Army for the acquisition of the Fire Scout airframe, and selected subsystems on a single Navy contract. The airframes will be subsequently modified to Service specific requirements under separate existing Navy and Army contracts. The goal is to maximize common support opportunities, eliminate redundant costs, maximize common avionics and sensor configuration to promote interoperability, and eliminate redundant tests.

Vertical Unmanned Air Vehicle (VUAV).

UAVs have played a critical role in recent operations and are also a key element of our transformation. The Marine Corps is pursuing the replacement of its almost 20-year-old Pioneer UAV system that has flown over 6,950 hours in support of OIF highlighting the criticality of these systems for our Marine forces. Requirements for VUAV are being developed in consonance with Ship to Objective Maneuver concepts from Expeditionary Maneuver Warfare, the Naval concepts of Sea Basing and Seapower 21, and with lessons learned from recent operational experience. The Fiscal Year 2006 Budget requests \$9.2M to evaluate the Eagle Eye UAV, currently being developed by the United States Coast Guard in connection with its Deepwater Program. The Department will also continue to evaluate the capabilities of Fire Scout for this mission, seeking commonality within the Department

Joint Unmanned Combat Air System (JUCAS)

The Fiscal Year 2006 Budget realigns funding to the Air Force to establish a Joint Program Office with Navy representation to advance the JUCAS Program. The Department is committed to a JUCAS initiative, developed in partnership with the Air Force and DARPA. The Navy and the Air Force have defined a common set of science and technology requirements that recognize the unique needs of each Service that will form the basis for developing air vehicles that will contribute to a joint warfighting concept of operation.

Technology

Technology will never substitute for presence; rather it should always address a mission requirement of making Naval Forces more effective. The Fiscal Year 2006 Budget requests \$1.78B for an Science & Technology (S&T) portfolio designed to provide the best scientific research and technology in the shortest time to maximize the benefit to our Sailors and Marines.

The Department pursues an integrated and comprehensive S&T program, from basic research through manufacturing technology. Programs emphasize integrating basic research with applied science and technology, promoting the effective and expeditious transition of discovery and invention into real-world applications. Moreover, "transition" has become of utmost importance, as the success of S&T is not measured simply by the basic science it supports, but also by the

active and successful transition of that science to supporting America's Sailors and Marines in the field: discovery and invention as well as exploitation and deployment of advanced technologies for the nation's Naval warfighters.

At the basic research end of the spectrum, investigations are focused on scientific and technical disciplines—ocean sciences, materials, electronics, mathematics, physics, chemistry, medicine, and others—and on discovering and understanding new phenomena that hold promise for future application in the Navy and Marine Corps-after-Next. Special emphasis is placed on those technologies that are uniquely naval and maritime and usually of interest primarily to the sea services, or those that leverage applicable naval disciplines in conjunction with the rest of America's basic research establishment. The Department recognizes and meets its obligation to support and maintain coordinated national programs in these areas of such vital importance to the Naval services.

Efforts on behalf of Tomorrow's Fleet/Force—largely technology development—are organized in terms of a series of Future Naval Capabilities (FNCs) that focus on major technical barriers challenging the Navy and Marine Corps in transforming themselves for 21st-Century operations. Components and systems developed to solve the operational problems defined by the FNCs are evaluated in feasibility demonstrations, prototypes, and field trials, with the results made available to Navy system developers. FNCs are fully integrated with Navy and Marine warfighting requirements and budget-development processes.

The Fiscal Year 2006 Budget requests funding to develop several Innovative Naval Prototypes (INPs). These initiatives include an electro-magnetic railgun prototype; new concepts for persistent, netted, littoral anti-submarine warfare; technologies to enable Seabasing; and the Naval tactical utilization of space. INPs represent revolutionary "game changers" for future naval warfare.

Experimentation

Identifying and developing future capabilities for Naval forces will require robust experimentation involving systems, platforms, organizations, and tactics. The Sea Trial and Marine experimentation elements of our Naval Power 21 strategy give the Fleet a strong voice in evaluating the potential of new technologies and warfighting concepts. Extensive use of simulations, modeling, joint test facilities and actual forces is necessary to maintain our technical advantage and continual command of the seas.

SEA TRIAL AND SEA ENTERPRISE IN ACTION: OPERATION RESPOND

In support of the I Marine Expeditionary Force's (I MEF) return to Iraq and in support of deployed Marines in Afghanistan, the Secretary of the Navy established a formalized process and action team, OPERATION RESPOND, to rapidly respond to technological and materiel requirements generated from deployed Marines. A senior Navy Marine Corps team co-chaired by the Assistant Secretary of the Navy (Research, Development and Acquisition) and the Deputy Commandant for Combat Development reviews and coordinates technical and materiel requirements for deployed units and utilizes the technical and engineering expertise throughout the DON and industry to expedite the best solutions available to counter rapidly evolving threats. This process will leverage and expand the current roles and capabilities of our established

requirements generation and materiel development and acquisition commands in order to better respond to innovative enemy threats.

Counter-Improvised Explosive Devise (IED) Technology, Equipment and Operations

The Department has reprogrammed over \$28.0M in Fiscal Years 2004 and 2005 for the testing, assessment and fielding of technology and equipment to counter and exploit the IED threat. Specific focus areas include joint, man-portable explosive ordnance disposal (EOD) and intelligence, surveillance, and reconnaissance robots, IED electronic countermeasures, backscatter X-Ray systems, specialized search dogs and establishing and maintaining an IED countermeasures group at our Naval EOD Technical Division, Indian Head, Maryland. This group is responsible for support to the joint, forward-deployed and CONUS-based IED exploitation cells, analysis of tactical and technical IED threats, development and dissemination of EOD threat advisories and EOD tactics, techniques and procedures, and provision of technical and training support to EOD operational teams.

Vehicle Hardening

We reprogrammed \$111M in Fiscal Year 2004 Navy RDT&E funds and an additional \$77.7M of Marine Corps personnel funds in Fiscal Year 2005 to support various Marine Corps vehicle-hardening programs. Additionally, \$90.1M was provided from Iraqi Freedom Funds to supplement and accelerate fulfillment of armor requirements through June 2005. Throughout this effort, both the Marine Corps Systems Command and the Marine Corps Warfighting Lab have worked with the Army Developmental Test Command to rapidly test and assess various ballistic materials to include ballistic glass, armor, and ceramic materials for use in vehicle hardening. To date, over 5,000 vehicles have been hardened with various combinations of interim armor to production armor kits. Other vehicle hardening initiatives include the development of an Explosive Resistant Coating (ERC) and a gunner shield. ERC is a polyurethane coating material that provides an additive lightweight ballistic capability to conventional armor. An innovative, joint testing linkage was established between the Marine Corps Warfighting Lab, Naval Surface Warfare Center Dahlgren, United States Air Force Research Lab, and the Technical Support Working Group to rapidly test the efficacy of ERC as a ballistic material for protecting vehicles. Testing was completed for HMMWV protection from small arms, IED and mine attacks. ERC is deployed in Iraq on 120 HMMWV interim armor sets. Gunner shields provide an armored turret as an additional level of protection for exposed vehicle gunners operating in HMMWVs and Medium Tactical Vehicle Replacements to date just under 1,900 have been fielded to forces in Iraq. ERC in multiple configurations with added composites may provide a lighter and promising ballistic protection when applied to vehicles. Testing and analysis is currently underway. Initial testing of ERC has demonstrated a lighter level of protection can be attained. We are committed to fully exploring ERC options.

Intelligence, Surveillance and Reconnaissance (ISR)

The Marine Corps is engaged in initiatives to provide enhanced ISR capabilities in theater. The Dragon Eye UAV is in full-scale fielding and the Marine Corps is working to conduct an Extended User Assessment of the Silver Fox UAV system. The Marine Corps is in the process of creating requirements for a Tier II UAV system to provide an organic UAV to the Infantry Regiment. The I MEF Scan Eagle services lease had codified a capability gap at this echelon

and the Marine Corps Warfighting Lab is coordinating with Marine Corps Combat Development Command to find a long-term solution. The Marines have also employed aerostat balloon platforms to provide persistent ISR capability.

Aircraft Survivability Equipment (ASE)

As a result of recent Army aviation lessons learned, Navy and Marine Corps aviation Staffs undertook a coordinated rapid fielding initiative of more than \$152M to upgrade ASE for Marine aviation units, preparing to deploy to Iraq in 2004. These efforts focused on ASE to counter infrared man-portable missiles and small arms being employed by insurgents in more advanced anti-aircraft tactics. As a result of the focused efforts by our Navy and Marine Corps aviation maintenance teams and hard-working contractors, every Marine Helicopter engaged in OIF II is today supporting combat operations with upgraded ASE. All deploying aircraft receive the “V2” upgrade to the AAR-47 Missile and Laser Warning Set and the new ALE-47 Countermeasure Dispensing systems; AH-1W aircraft received turned exhaust modifications to reduce their IR signatures; AH-1W, UH-1N and KC-130 aircraft have been equipped with the more advanced APR-39AV2 radar detection system; CH-53E aircraft received interior ballistic armor and new ramp-mounted GAU-21 .50 caliber machine guns; existing IR jamming systems on the CH-46E and KC-130 aircraft were upgraded. CH-46 aircraft received the M-240 7.62 caliber machine guns, lightweight armor, and lightweight armored cockpit seats.

SUMMARY

Our mission remains bringing the fight to our enemies. The increasing dependence of our world on the seas, coupled with growing uncertainty of other nations’ ability or desire to ensure access in a future conflict, will continue to drive the need for Naval forces and the capability to project decisive joint power by access through the seas. The increased emphasis on the littorals and the global nature of the terrorist threat will demand the ability to strike where and when required, with the maritime domain serving as the key enabler for U.S. military force.

Accordingly, we will execute the GWOT while transforming for the future fight. We will continue to refine our operational concepts and appropriate technology investments to deliver the kind of dominant military power from the sea envisioned in Sea Power 21. We will continue to pursue the operational concepts for seabasing persistent combat power, even as we invest in technology and systems to enable Naval vessels to deliver decisive, effects-based combat power in every tactical and operational dimension. We look forward to the future from a strong partnership with Congress that has brought the Navy and Marine Corps Team many successes today. We thank you for your consideration.