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SENATE ARMED SERVICES COMMITTEE**

**STATEMENT OF  
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BEFORE THE  
SENATE ARMED SERVICES SUB COMMITTEE ON SEAPOWER**

**03 MAY 2007**

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Chairman Kennedy, Senator Thune and distinguished members of the Sea Power Sub-Committee, it is a privilege to appear before you representing the brave men and women, Sailors and Civilians of the United States Navy. We appreciate the long standing support we have received from your sub-committee.

## **INTRODUCTION**

We are a maritime nation involved in a long, irregular and global war that extends far beyond Iraq and Afghanistan. The threat we face breeds within failing states and the under-governed spaces of the world and preys upon those weakened by poverty, disease, and hatred. It thrives where there is no rule of law and spreads through cyberspace and the vast maritime commons in this age of globalization.

We are also confronted by nation-states determined to develop sophisticated weapons systems, including nuclear arms. We cannot allow ourselves to be fixated on one threat alone. Our national security is dependent upon a strong Navy that can keep the sea lanes free, deter aggression, safeguard our sources of energy, protect the interests of our citizens at home and reassure our friends abroad. We must never relinquish overmatching capability and capacity.

While our ground forces are engaged in Iraq and Afghanistan, Navy's ability to deliver two unique attributes - global reach and persistent presence - continues to support our worldwide responsibilities and provide a powerful deterrent force in day-to-day operations and as our nation's "Strategic Reserve." As we pace the rapidly changing security environment, there is no alternative to a well-balanced Fleet.

As I testified before Congress last year and earlier this year, I identified three priorities addressed by our FY2007 budget: Sustain Combat Readiness, Build a Fleet for the Future, and Develop 21<sup>st</sup> Century Leaders. We have made progress in all three and our FY2008 Budget reaffirms our commitment to these priorities. In today's testimony, I will focus on building a fleet for the future, placing particular emphasis on strengthening our core warfighting capabilities and increasing our military capacity.

## **FORCE STRUCTURE**

In 2005, the Navy conducted extensive analysis to determine the minimum required force structure needed to meet the security demands of the 21<sup>st</sup> century with an acceptable level of risk. In February 2006, Navy submitted a 30-Year Shipbuilding Plan that would provide approximately 313 ships by 2020 with warfighting capacity and capability to meet the expected threat and security demands. Our recently submitted FY 2008 Annual Long Range Plan for Construction of Naval Vessels (30-year Shipbuilding Plan), essentially unchanged from our 2007 submission, is intended to provide the shipbuilding industry with sufficient predictability to maintain critical skills and to make business decisions that increase efficiency and productivity in order to meet the Navy's projected shipbuilding requirements.

Navy's force structure requirement was developed and validated through detailed joint campaign and mission level analysis, optimized through innovative sourcing initiatives (e.g. Fleet Response Plan (FRP), adaptive force packaging) that increase platform operational availability. Importantly, the future battle force was measured against the anticipated threats for the 2020 timeframe.

The future Navy will remain sea based, with global speed and persistent presence provided by forward deployed and surge-ready forces through the FRP. To maximize return on investment, the Navy must be balanced to fight an asymmetric war against the evil of terrorism, to help secure the maritime commons through strong partnerships and Maritime Security Operations, to deter would-be aggressors and, when necessary, to fight and win Major Combat Operations (MCO). This capabilities-based battle force can be disaggregated and distributed worldwide to support the operational demands of our Combatant Commanders.

Our force structure strategy is balanced between new construction and modernization for ships, and recapitalization and sustainment for aircraft. It is critical to our strategy for us to have vigorous modernization and sustainment programs to achieve the expected service life of our ships and aircraft in the face of rapidly escalating global threats using advanced technologies. Modernization and sustainment optimizes our capital investments.

With 38 ships currently under contract for construction, we can see the future fleet taking shape. In 2006, we christened the first FREEDOM Class littoral combat ship, amphibious assault ship MAKIN ISLAND, amphibious transport dock ship GREEN BAY, guided missile destroyers GRIDLEY and SAMPSON, nuclear attack submarine HAWAII, auxiliary dry cargo ships ALAN SHEPARD and SACAGAWEA, and the aircraft carrier GEORGE HW BUSH. We commissioned the nuclear attack submarine TEXAS and the guided missile destroyer FARRAGUT. We also rolled out the first EA-18G GROWLER. By the end of FY 2007, our Fleet's net size will have grown from a low of 274 ships in March 2007 to 279, including five newly commissioned ships.

Navy is in the process of evaluating the impact global developments have had on our risk assumptions in our force plan and ultimately whether or not this should affect our future Battle Force. We are further evaluating lessons learned from the recently identified LCS cost overruns. Whatever the outcome of these evaluations, we will work closely with our partners in industry to control requirements and costs, and provide the industrial base the stability it needs to become more productive.

Future platforms and combat systems must be designed and built with the knowledge that we plan to continually upgrade them over their lifetime. An Open Architecture approach to software acquisition and development of integrated weapons systems is a critical part of this business model. Free and open competition in which the best ideas win is the goal.

To facilitate the stability required to achieve reduced costs in this constrained industrial sector, the FY 2008 President's Budget Submission made no changes in ship acquisitions in FY 2008 from PB07 to PB08. Navy has a long-range vision to maximize reuse of ship designs and components, and to employ a business model that encourages the use of open architecture and mission systems modularity.

The next major challenge in building a fleet for the future is to deliver a long range aviation procurement plan. Much work has been done analyzing joint warfighting capabilities and capacity based on threat and risk assessments driven by Defense Planning Guidance. Consideration has also been

given to affordability, industrial capacity and production times associated with next generation aviation warfare. The Navy will work to deliver a stable aviation build plan that transforms and balances aviation capabilities with respect to conventional and irregular warfare, reduces excess capacity, and achieves technological superiority through cost-wise investments in recapitalization, sustainment and modernization programs.

Resourcing critical maritime and joint effects, the President's Budget procures 188 aircraft in FY 2008, with a goal of eventually reducing average aircraft age from 74% to 50% of expected service life. The plan is structured to support required economic order quantity investments and facilitate Multi-Year Procurement (MYP) contracts.

#### **BUILD A FLEET FOR THE FUTURE**

As we adapt to asymmetric threats and the challenges of irregular warfare, we cannot lose sight of Navy's core warfighting competencies. We must continue to improve performance in anti-submarine and mine warfare, anti-surface warfare, anti-air warfare, strike warfare, ballistic missile defense, and other core maritime superiority missions. We will continue to mature our Fleet Response Plan (FRP) to ensure combat ready, surge-capable forces are available to meet any contingency.

We have worked hard with Congress and Industry to start to create stability between our shipbuilding plans and industrial base. We must continue to fund and build a balanced, effective Battle Force of about 313 ships ... the minimum force required to guarantee the long-term strength and viability of U.S. naval sea and air power with acceptable risk. We recognize the need to control requirements, maintain program stability, curb costs, and encourage best business practices. We need support for sustained funding of our shipbuilding account - consistent with the 30-year plan - that is critical to provide our partners in industry the stability they need to curb cost growth and sustain our vital shipbuilding industrial base.

To build a fleet for the future and ensure the superiority of our future fleet, we seek congressional support in the following areas:

- 11 Carrier Force. The 30 Year Shipbuilding Plan recognizes that as a result of the retirement of USS ENTERPRISE in FY 2013, the number of aircraft carriers will drop to 10 for a period of approximately 33 months, until the USS GERALD FORD enters active service. Legislative relief is required from the FY 2007 National Defense Authorization Act requiring a carrier force of 11. In developing the 30 Year Shipbuilding Plan, Navy conducted extensive analysis that concluded the temporary drop to a carrier force of 10 for 33 months, from FY 2013 through FY 2015, is an acceptable short term risk.
- Littoral Combat Ship. The Littoral Combat Ship program remains of critical importance to our Navy providing mine warfare, anti-submarine and anti-surface warfare capabilities. Extensive force structure analysis, as reflected in the 30 Year Shipbuilding Plan, establishes a requirement for 55 LCS. Navy is committed to satisfying this valid requirement.

Current cost estimates exceed established thresholds for detail design and construction of LCS 1, the lead Lockheed Martin hull. This recent cost growth (to some extent the result of unrealistic schedule and cost constraints, unstable specifications at time of contract award, design-build concurrency, sub-contractor performance delays impacting critical path, rework due to design changes, and Engineering Change Proposal scope increases) has provided an opportunity to reinforce the Navy's commitment to providing warfighting capability through affordability. The Navy executed a pause in the construction of LCS 3, the second Lockheed Martin hull, to conduct a thorough review of the program, and to examine both internal and external factors relating to the acquisition and contracting processes, practices, and oversight and the related impact on cost. Negotiations failed to achieve a proper balancing of risk at an executable price for the Navy, which has led to the termination of construction of LCS Hull #3.

On 12 April 2007, Navy terminated the contract with Lockheed Martin for construction of LCS Hull #3 since the cost-to-risk balance was considered unaffordable. The Navy remains committed to bringing Littoral Combat

Ship capability into the Fleet to address emerging Long War and MCO capability requirements. Our LCS acquisition strategy is executable, affordable, and in the best interests of the Navy.

- VIRGINIA Class Multi-Year Procurement (MYP). The Navy remains committed to reduce VIRGINIA acquisition costs to \$2 billion (FY 2005 dollars) per hull concurrent with a build rate of two ships per year starting in FY 2012. Two items requested this year are critical to achieving this goal. The first is authority in the FY 2008 National Defense Authorization Act to enter into a Multi-Year Procurement (MYP) contract with Economic Order Quantity (EOQ) in FY 2009. This would provide the Navy a significant negotiating advantage, send a clear signal to industry regarding the Navy's commitment to future submarine procurement, and reduce risk. The Navy anticipates \$2.9 billion (13%) of savings compared to annual (single ship) procurement contracts by using a 5-year/7-ship MYP contract for VIRGINIA Class submarines starting in FY 2009.

The second item critical to achieving cost reduction and an increased build rate of two submarines per year is the VIRGINIA Class cost reduction investment contained in the FY 2008 budget request. As detailed in the recently delivered Report to Congress on VIRGINIA Class Cost Reduction, the Navy plans to achieve its cost goal for the program through construction performance improvements, design changes that reduce cost, and by increasing the procurement rate under a MYP contract with EOQ authority. The cost reduction investment funds are vital to implementing the needed construction performance improvements and design changes.

As identified in the 30 year shipbuilding plan, even with a build rate of two VIRGINIA Class submarines per year commencing in 2012, the number of nuclear attack submarines will fall below the desired 48 submarine fleet identified in the 30 year shipbuilding plan from about 2020 through 2034. This apparent shortfall, however, can be managed through several risk mitigation efforts. First, stationing 60% of our attack submarines in the Pacific, as recommended in the 2006 Quadrennial Defense Review, will reduce

critical response times in the Pacific. Second, by adjusting patrol times of our attack submarines, we can ensure greater operational availability without significantly impacting our Sailors and their families. Finally, by pursuing an integrated approach to undersea warfare queuing through multiple sensors (e.g. Unmanned Undersea Vehicles, the P-8A Multi-Mission Aircraft, SH-60R/S helicopters) we can improve critical target detection, tracking, and sensor to shooter response times to fully support the requirements of our Combatant Commanders for attack submarine presence world-wide. Other initiatives under review include reducing build time of the VA Class SSN from 72 to 60 months and considering modest hull-life extensions on a small number of SSNs.

- Split Funding for ZUMWALT Class DDG. The DDG 1000 ZUMWALT Class destroyer brings much needed stealth, counter air, and surface fire support to the fight. The Tumblehome hull provides a reduced radar cross section and acoustic signature while its Dual Band Radar represents a significant increase in air defense capability in the cluttered littoral environment. With the Advanced Gun System (AGS) and associated Long Range Land Attack Projectile (LRLAP) DDG 1000 will provide volume and precision fires in support of Joint forces ashore. A Global Positioning System (GPS) guided, 155 millimeter round, LRLAP will provide all weather fires capability out to 83 nautical miles. Open Architecture and reduced manning will provide the Navy life cycle cost savings and technology that can be retrofit to legacy ships. DDG 1000 is the harbinger of our future fleet, taking major steps in advanced warfighting, reduced manning, a fully integrated power/propulsion system, and an Open Architecture design.

The support of Congress for last year's split funding request is greatly appreciated. This year Navy requests the second half of split year funding for dual lead ships of the ZUMWALT Class destroyer to maximize competitive efficiencies and focus design efforts. Split funding will also lend stability to the shipbuilding industrial base. This funding strategy supports the current budget structure, enhances future competitive opportunities, and limits liability for appropriations in future years.

- Joint Strike Fighter. The F-35 Joint Strike Fighter remains the cornerstone of Navy's continuing superiority in air warfare. Although risk associated with the recent two year slip in the carrier variant of the F-35 will be mitigated by a modest increased buy of F/A-18E,F variants, there should be no doubt that JSF is a much more capable aircraft to which the Navy is fully committed. I encourage your continued strong support of this program to guard against further delays in production.
- Legacy Aircraft Replacement. As our aging, legacy aircraft reach the end of the service lives, funding for follow-on programs becomes critical. Among these programs are the P-8A Multi-mission Maritime Aircraft (MMA), the F/A 18-E/F and JSF, the EA-18G airborne electronic attack aircraft, the V-22 tilt-rotor aircraft, and the MH-60R/S and CH-53K helicopters. Navy's RDT&E program is also vital to this effort.
- Anti-submarine warfare. Submarines with improving stealth and attack capability - particularly modern diesel attack submarines - are proliferating world-wide at an alarming rate. Locating these relatively inexpensive but extremely quiet boats presents our Navy with a formidable challenge. Navy is pursuing a distributed and netted approach to ASW. Some of the key ASW programs we must continue to develop and field as quickly as possible include: Surface Ship Torpedo Defense System (SSTD); High Altitude ASW Weapon Concept (HAAWC); Deployable Distributed Autonomous system (DADS); Reliable Acoustic Path Vertical Line Array (RAPVLA), and Aircraft Carrier Periscope Detection Radar (CVNPDR).
- SONAR Restrictions. ASW is a very complex and challenging warfighting competency in which to achieve and sustain the required level of expertise. Therefore every opportunity we have to gain and maintain proficiency at the ship/unit level, and every opportunity we have to integrate units in complex scenarios is crucial to our readiness. Unfortunately, our ability to train in the same manner in which we fight is under attack in public forums, including the courts. Thus far, we have seen little scientific basis for the claims lodged against the Navy.

However, these allegations present the potential for severe restrictions on our continued ability to train effectively, as we saw in RIMPAC '06 wherein we lost three days of valuable ASW training with active sonar because of a court restraining order. Navy is currently executing a comprehensive plan of action to cover all our at-sea training areas with environmental compliance documents by the end of 2009. We are committed to maintaining an open dialogue, continuing to advance our scientific understanding of the impacts of sonar on marine mammals, and complying with the relevant statutes. We have consistently made this clear as an organization in our debate on this issue. Maintaining proficiency in ASW is a daily challenge, and while our long-term compliance documents are being developed, we cannot afford to stop training. We owe it to our Sailors to ensure they receive the training they need to fight and win.

The Marine Mammal Protection Act (MMPA) requires permits for activities that may affect marine mammals. This includes military activities, including certain Navy activities at sea. The National Defense Authorization Act of 2004 included a provision that authorizes the Secretary of Defense to grant exemptions to the MMPA for certain military activities critical to our national defense. On 23 January 2007, the Deputy Secretary of Defense granted Navy a National Defense Exemption (NDE) for two years covering mid-frequency active (MFA) sonar activities for major exercises and in major operating areas, as well as the use of Improved Explosive Echo Ranging sonobuoys (IEER). The NDE will help Navy continue to conduct the sonar training necessary for our national defense while protecting marine mammals through established mitigation measures.

- Naval Expeditionary Combat Command (NECC). NECC is developing into a true force of choice in phase zero (pre-conflict) and phase V (reconstruction) operations, and as a vital part of our nation's Long War against terrorism. All new forces - Riverine, Expeditionary Training Group, Maritime Civil Affairs and Maritime Expeditionary Security Force - will meet full IOC objectives in FY 2007. Riverine deployed its first squadron to Iraq in March to provide area security at Haditha dam and interdiction operations on

the Euphrates River. Your continued support of our Riverine capability and capacity is vital. Our second Riverine Squadron was established on 2 February 2007 and our third Squadron will be stood up this June.

- Sea Basing and Expeditionary Warfare. It would be difficult to consider any future expeditionary missions without recognizing the need for a sea base from which to employ Joint/Multinational Capabilities across the full Range of Military Operations (ROMO). Sea Basing provides operational maneuver and assured access to the Joint/Multinational forces while significantly reducing our footprint ashore, thereby minimizing the need to obtain host nation permission and/or support. These operational characteristics will prove increasingly vital in the post-OIF/OEF political-military security environment. Navy is exploring innovative operational concepts combining Sea Basing with adaptive force packaging that will further support national security policy and the Combatant Commanders' objectives worldwide. Our 30-Year Shipbuilding Plan provides for Sea Basing that covers the spectrum of warfare from Joint Forcible Entry to persistent and cooperative Theater Security Cooperation.

Over the last several years, my staff and that of the Commandant's Marine Corps Combat Development Center (MCCDC), and Marine Corps Headquarters (HQMC), have worked diligently to develop a strategy for amphibious warfare that is relevant to the myriad challenges we face in the complex security environment of the 21st Century. The investment strategy we have embarked upon represents the Navy-Marine Corps shared vision of the future and a significant investment of time and resources for both our services. This vision was further validated by the Naval Operating Concept (NOC) signed by the Commandant of the Marine Corps, Gen Hagee, and me last summer.

Based on a foundation built upon well-defined analytical underpinnings, our staffs agreed on an investment program that would provide a capable, agile, and affordable response force. Specifically, our investments in tomorrow's Navy reflect a commitment to build the fleet of the future, with the capability and capacity to fight and win the Nation's

wars, including amphibious operations from the sea. This commitment supports the operational forces in the assault echelon and provides protection for the Maritime Prepositioning Force - Future (MPF(F) to ensure its survivability in any hostile environment.

The ability of our future fleet to meet the demand signal for amphibious forces must be viewed in the aggregate. Given the cost of ships today, we cannot discount the value of ships procured to support prepositioned equipment. Prepositioned assets must be included in the overall force availability equation - ignoring MPF(F) as the lift component of an additional MEB is would be incongruous with today's fiscal environment. The capabilities provided by the MPF(F) mitigate concerns regarding the operational availability of the assault echelon force required to deliver 2.0 Marine Expeditionary Battalion (MEB) lift, vehicle square footage, and passenger requirements. As reflected in our 30 year shipbuilding plan, we believe 30 amphibious ships will meet these requirements, when supported by, and supporting, the MPF(F).

- Ballistic Missile Defense. Missile tests on the Korean Peninsula and by Iran, along with the proliferation of ballistic missile technology, underscore the growing need for a robust, sea-borne ballistic missile defense system. Last year, the Navy made further progress on our Aegis Ballistic Missile Defense (BMD), the sea based component of the Missile Defense Agency's (MDA) Ballistic Missile Defense System (BMDS). It enables surface combatants to support ground-based sensors and provides a capability to intercept short and medium range ballistic missiles with ship-based interceptors (SM-3). The Sea-Based Terminal effort will provide the ability to engage Short Range Ballistic Missiles (SRBMs) with modified SM-2 Blk IV missiles from Aegis BMD capable ships.

In May, 2006, USS LAKE ERIE (CG 70) successfully engaged and intercepted a LANCE short range test target with a modified SM-2 Block IV missile in a Navy-sponsored BMD demonstration. As a result, the Navy is modifying the remaining inventory of 100 SM-2 Block IV missiles, and MDA is modifying the Aegis BMD program to support sea-based terminal engagements. In

June, 2006, Navy successfully achieved a second engagement of a separating SRBM target with the AEGIS BMD system.

Last week, the Navy successfully engaged and destroyed a non-separating exo-atmospheric short range ballistic missile, while simultaneously engaging a low altitude cruise missile. This successful engagement brings the tally to eight successful intercepts in ten flight tests and underscores the value of this sea borne ballistic missile defense capability in an era of rapidly proliferating ballistic missile hardware and technology.

- Research and Development. To achieve *the speed of war* Navy is pursuing Innovative Naval Prototypes (INPs) - revolutionary "game changers" for future naval warfare. These initiatives have resulted in the development of an electro-magnetic rail-gun prototype; new concepts for persistent, netted, littoral anti-submarine warfare; technologies to enable Sea-basing; and the naval tactical utilization of space.
- Public Shipyard Loading. As we work with industry on shipbuilding cost reduction, we must ensure legislation and policy support best business practices and efficiencies. Apportioning work based upon funding quotas to drive work-loading in public Naval shipyards potentially diverts efficiency opportunities away from the private sector. Public yards provide vital services for nuclear propulsion and submarine work, and these critical competencies must be maintained. However, our first priorities in shipyard loading should be quality, efficiency, and cost savings. We seek your assistance in removing restrictions on our work-loading flexibility.

Additional information on some of Navy's priority warfighting programs is offered in the attached Annex I.

## **Conclusion**

Our Navy is truly a bargain, costing the taxpayers less than 1% of GDP. But as we strive to sustain combat readiness, build a fleet for the future and develop 21<sup>st</sup> century leaders, we cannot allow ourselves to take this for

granted. We must be mindful of the need to maintain a strong Navy now, and after our ground forces return home.

It has been just over twenty years since Congress passed the Goldwater-Nichols Department of Defense Reorganization Act of 1986, subsequently signed into law by President Reagan. While this landmark legislation established a clean chain of command running from the President through the Secretary of Defense and Chairman of the Joint Chiefs directly to the unified combatant commanders, and increased synergy among services by providing for shared procurement and development of technologies, it also precluded Service Chiefs from participating in the acquisition process beyond the identification of requirements.

Without direct involvement in the entire acquisition cycle, Service Chiefs have little control over the mechanisms that drive efficiencies and best business practice in our major acquisition programs. And yet, the Chiefs bear the responsibility of providing the right capabilities and capacity to meet the demands of our Combatant Commanders. I believe we should explore putting the Service Chiefs, and their military expertise, back into the acquisition chain of command and to hold them accountable for their procurement programs.

Our nation depends upon a strong Navy with the global reach and persistent presence needed to provide deterrence, access, and assurance, while delivering lethal warfighting capacity whenever and wherever it is needed. Our Navy is fighting the Global War on Terror while at the same time providing a Strategic Reserve worldwide for the President and our Unified and Combatant Commanders. As we assess the risks associated with the dynamic security challenges that face us, we must ensure we have the Battle Force, the people, and the combat readiness we need to win our nation's wars.

Simply reacting to change is no longer an acceptable course of action if our Navy is to successfully wage asymmetric warfare and simultaneously deter regional and transnational threats: Two Challenges, One Fleet. Our nation's security and prosperity depend upon keeping our shores safe and the world's maritime highways open and free.

## **ANNEX I**

### **Programs and Initiatives to Achieve CNO Priority to Build a Fleet for the Future**

*Programs and practices of particular interest include  
(listed in order of FY 2008 dollar value):*

#### **RDT&E Development and Demonstration Funds**

Navy's \$15.9 billion investment in various technology, component, and system development funds, as well as our operational development and testing programs provide a balanced portfolio. Not only do they ensure successful development of programs for our Fleet for the Future, they also leverage the Fleet, Systems Commands, warfare centers, and others to align wargaming, experimentation, and exercises in developing supporting concepts and technologies.

#### **DDG 1000**

This multi-mission surface combatant, tailored for land attack and littoral dominance, will provide independent forward presence and deterrence and operate as an integral part of joint and combined expeditionary forces. DDG 1000 will capitalize on reduced signatures and enhanced survivability to maintain persistent presence in the littoral. The program provides the baseline for spiral development to support future surface ships. Our FY 2008 request is for \$3.3 billion in shipbuilding and research funds.

#### **CVN 21**

The CVN 21 Program is designing the next generation aircraft carrier to replace USS ENTERPRISE (CVN 65) and NIMITZ-class aircraft carriers. CVN 78-class ships will provide improved warfighting capability and increased quality of life for our Sailors at reduced acquisition and life cycle costs. \$2.8 billion in Shipbuilding funds for FY 2008 supports acquisition of USS GERALD R. FORD (CVN 78), the lead ship of the class, scheduled for delivery in late FY 2015. Additionally, the program has \$232 million in research and development supporting work

on the Electromagnetic Aircraft Launch System and other warfighting capability improvements.

Although multi-year (four years) funding for CVN 21 was authorized in the FY 2007 Budget, none of these funds was executed in FY 2008. As the Navy better defines procurement requirements, we anticipate executing multi-year funds in FY 2009.

### **F-35 Joint Strike Fighter (JSF)**

F-35 is a joint cooperative program to develop and field family of affordable multi-mission strike fighter aircraft using mature/demonstrated 21st century technology to meet warfighter needs of the Navy, Marines, Air Force, and international partners including the U.K., Italy, Netherlands, Denmark, Turkey, Norway, Australia, and Canada. Navy's FY 2008 \$1.2 billion in procurement buys 6 short take-off and landing variants. An additional \$1.7 billion in research and development continues aircraft and engine development.

### **VIRGINIA Class Fast Attack Nuclear Submarine (SSN)**

The VIRGINIA Class attack submarine is a multi-mission weapons platform that emphasizes affordability and optimizes performance for undersea superiority in both littoral and open ocean missions. In March 2007 USS VIRGINIA (SSN 774) completed its post-shakedown availability and the class achieved Initial Operating Capability (IOC). The FY 2008 President's Budget contains \$2.5 billion dollars for the procurement of one VIRGINIA Class submarine and advanced procurement of long-lead items for the submarines in FY 2009 and 2010.

Lead ship operational performance exceeded expectations. Follow-on submarine performance has been even better:

- USS TEXAS (SSN 775) INSURV trial was best performance by the second SSN of any class.
- Third ship (HAWAII, SSN 776) was the most complete submarine ever at launch (greater than 90 percent complete), had the best INSURV trial of the class, and was delivered on the original contract delivery date.

### **F/A-18E/F Super Hornet**

The Navy's next generation, multi-mission Strike Fighter replaces retired F-14s, older model F/A-18s, and assumes the S-3 aircraft carrier-based aerial refueling role. F/A-18E/F provides a 40 percent increase in combat radius, 50 percent increase in endurance, 25 percent greater weapons payload, three times more ordnance bring-back, and is five times more survivable than F/A-18C models. Approximately 55 percent of the total procurement objective has been delivered (254 of 460). F/A-18E/F is in full rate production under a second five-year multi-year contract (Fiscal Years 2005-2009). \$2.1 billion in FY 2008 procures 24 aircraft as part of this contract.

### **EA-18G Growler**

The Growler is the Navy's replacement for the EA-6B. Inventory objective is 84 aircraft for test, Fleet Replacement Squadron, attrition, pipeline and 10 operational carrier airwing squadrons to provide the Navy's carrier-based Airborne Electronic Attack (AEA) capability. The program is on schedule and budget. All Key Performance Parameter (KPP) and Technical Performance Measure (TPM) thresholds are being met or exceeded. Program achieved first flight in August 2006; one month ahead of schedule. \$1.6 billion supports development and procurement of 18 aircraft in FY 2008.

### **MH-60R/S Multi-Mission Helicopter**

The MH-60R is a cornerstone of the Navy's Helicopter Concept of Operations (CONOPS), which reduces from six to two the helicopter variants in use today. The MH-60R Multi-Mission Helicopter program will replace the surface combatant-based SH-60B, carrier-based SH-60F, and anti-surface capabilities of the S-3 with a newly manufactured airframe and enhanced mission systems. Sea control missions include Undersea and Surface Warfare. The MH-60R provides forward-deployed capabilities to defeat area-denial strategies, allowing joint forces to project and sustain power. Full Rate Production was approved in March 2006. \$998 million in FY 2008 procures 27 aircraft.

The MH-60S is designed to support Carrier and Expeditionary Strike Groups in Combat Logistics, Search and Rescue, Vertical Replenishment, Anti-Surface Warfare, Airborne Mine Countermeasures, Combat Search and Rescue, and Naval Special Warfare mission areas. This program is in production. This fiscal year, Block 2 of the program will see the IOC of the first of five Organic Airborne Mine Countermeasures (OAMCM) systems (AQS-20). The remaining four airborne mine countermeasure systems will IOC between Fiscal Years 2008-2010. An Armed Helicopter capability is also expected to enter IOC this year. \$504 million in FY 2008 procures 18 aircraft.

### **LPD 17**

LPD 17 functionally replaces LPD 4, LSD 36, LKA 113, and LST 1179 classes of amphibious ships for embarking, transporting and landing elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles, or a combination of these methods. \$1.4 billion in this budget's shipbuilding request procures LPD 25.

### **LHA(R)**

LHA(R) replaces five aging LHA Class ships which are reaching the end of their administratively extended service lives. LHA(R) Flight 0 is a modified LHD 1 Class variant designed to accommodate aircraft in the future USMC Aircraft Combat Element (ACE) including JSF and MV-22. The FY 2008 request for \$1.4 billion represents the second year of split funding to support completion of the lead ship in the class.

### **Littoral Combat Ship (LCS)**

Designed to be fast and agile, LCS will be a networked surface combatant with capabilities optimized to assure naval and joint force access into contested littoral regions. LCS will operate with focused-mission packages that deploy manned and unmanned vehicles to execute a variety of missions, including littoral anti-submarine warfare (ASW), anti-surface warfare (SUW) and mine countermeasures (MCM). LCS will possess inherent capabilities including homeland defense, Maritime Interception Operations (MIO) and Special Operation Forces support. LCS will employ a Blue-Gold multi-

crewing concept for the early ships. The crews will be at a "trained to qualify" level before reporting to the ship, reducing qualification time compared to other ships.

After an in-depth study, the Navy has revalidated the warfighting requirement and developed a restructured program plan for the LCS that improves management oversight, implements more strict cost controls, incorporates selective contract restructuring, and ensures delivery within a realistic schedule.

### **P-8A Multi-mission Maritime Aircraft (MMA)**

The P-8A replaces the P-3C Orion on a less than 1:1 basis. This aircraft provides lethality against submarine threats, broad area maritime and littoral armed Anti-Submarine Warfare patrol, Anti-Surface Warfare, and Intelligence Surveillance Reconnaissance. The P-8A is the only platform with this operationally agile capability set. It fills Combatant Commander requirements in major combat and shaping operations, as well as the War on Terror and homeland defense. The program has been executed on time and on budget. Preliminary Design Review has successfully completed and is now in the detailed design phase. \$880 million in research and development funds are included in the FY 2008 budget. Initial Operational Capability (IOC) is planned in FY 2013.

### **E-2D Advanced Hawkeye**

The E-2D Advanced Hawkeye (AHE) program will modernize the current E-2C weapons system by replacing the radar and other aircraft system components to improve nearly every facet of tactical air operations. The modernized weapons system will be designed to maintain open ocean capability while adding transformational littoral surveillance and Theater Air and Missile Defense capabilities against emerging air threats in the high clutter, electro-magnetic interference, and jamming environments. \$866 million in FY 2008 continues development work and procures three Pilot Production Aircraft. The AHE will be one of the four pillars contributing to Naval Integrated Fire Control-Counter Air. The AHE program plans to build 75 new aircraft.

## **ASW Programs**

The Navy continues to pursue research and development of Distributed Netted Sensors (DNS); low-cost, rapidly deployable, autonomous sensors that can be fielded in sufficient numbers to provide the cueing and detection of adversary submarines far from the Sea Base. Examples of our FY 2008 request of \$24 million in these technologies include:

- Reliable Acoustic Path, Vertical Line Array (RAP VLA). A passive-only distributed system exploiting the deep water propagation phenomena. In essence, a towed array vertically suspended in the water column.
- Deep Water Active Distributed System (DWADS). An active sonar distributed system optimized for use in deep water.
- Deployable Autonomous Distributed System (DADS). A shallow water array, using both acoustic and non-acoustic sensors to detect passing submarines. DADS will test at sea in FY 2008.

Further developing the Undersea Warfare Decision Support System (USW-DSS) will leverage existing data-links, networks, and sensor data from air, surface, and sub-surface platforms and integrate them into a common ASW operating picture with tactical decision aids to better plan, conduct, and coordinate ASW operations. We are requesting \$23 million in FY 2008 towards this system.

To engage the threat, our forces must have the means to attack effectively the first time, every time. The Navy has continued a robust weapons development investment plan including \$293 million requested in the FY 2008 on such capabilities as:

- High-Altitude ASW Weapons Concept (HAAWC). Current maritime patrol aircraft must descend to very low altitude to place ASW weapons on target, often losing communications with the sonobuoy (or distributed sensor) field. This allows the aircraft to remain at high altitude and conduct an effective attack while simultaneously enabling the crew to

maintain and exploit the full sensor field in the process. This capability will be particularly important in concert with the new jet-powered P-8A MMA. A test is scheduled for May 2007.

- Common Very Lightweight Torpedo (CVLWT). The Navy is developing a 6.75" torpedo suitable for use in the surface ship and submarine anti-torpedo torpedo defense, and the offensive Compact Rapid Attack Weapon (CRAW) intended for the developing manned and unmanned aerial vehicles.

Finally, to defend our forces, key defensive technologies being pursued include:

- Surface Ship Torpedo Defense (SSTD). Program delivers near term and far term torpedo defense. The planned FY 2008 \$16 million R&D investment supports ongoing development of the 6 ¾ inch Common Very Lightweight Torpedo (CVLWT) which supports both the Anti-Torpedo Torpedo (ATT) and the Compact Rapid Attack Weapon (CRAW). Also, several capability upgrades to the AN/SLQ-25A (NIXIE) are being incorporated to improve both acoustic and non-acoustic system performance to counter current threat torpedoes. These enhancements also support their use in the littorals and are scheduled to complete in FY 2009. The AN/WSQ-11 System uses active and passive acoustic sensors for an improved torpedo Detection Classification and Localization (DCL) capability, and a hard kill Anti-Torpedo Torpedo (ATT) to produce an effective, automated and layered system to counter future torpedo threats. DCL improvements include lower false alarm rates and better range determination.
- Aircraft Carrier Periscope Detection Radar (CVN PDR). An automated periscope detection and discrimination system aboard aircraft carriers. System moves from a laboratory model, currently installed on USS KITTY HAWK, to 12 units (1 per carrier, 1 ashore) by FY 2012. FY 2008 funds of \$7 million support this effort.

Platform Sensor Improvements. Against the quieter, modern diesel-electric submarines, work continues on both

towed arrays and hull mounted sonars. Our \$410 million request in FY 2008 includes work on the following:

- TB-33 thin-line towed array upgrades to forward deployed SSN's provides near term improvement in submarine towed array reliability over existing TB-29 arrays. TB-33 upgrades are being accelerated to Guam based SSN's.
- Continued development of twin-line thin line (TLTL) and vector-sensor towed arrays (VSTA) are under development for mid-far term capability gaps. TLTL enables longer detection ranges/contact holding times, improves localization, and classification of contacts. VSTA is an Office of Naval Research project that would provide TLTL capability on a single array while still obviating the bearing ambiguity issue inherent in traditional single line arrays.

### **Modernization**

Achieving full service life from the fleet is imperative. Modernization of the existing force is a critical enabler for a balanced fleet. Platforms must remain tactically capable and structurally sound for the duration of their designed service life.

#### **Cruiser (Mod)**

AEGIS Cruiser Modernization is key to achieving the 313 ship force structure. A large portion of surface force modernization (including industrial base stability) is resident in this modernization program. \$403 million across several appropriations in FY 2008 supports this program.

A comprehensive Mission Life Extension (MLE) will achieve the ship's expected service life of 35+ years and includes the All Electric Modification (replacing steam systems), SMARTSHIP technologies, Hull Mechanical & Electrical (HM&E) system upgrades, and a series of alterations designed to restore displacement and stability margins, correct hull and deck house cracking and improve quality of life and service on board.

### **Destroyer (Mod)**

The DDG 51 modernization program is a comprehensive 62 ship program designed to modernize HM&E and Combat Systems. These upgrades support reductions in manpower and operating costs, achieve 35+ year service life, and allows the class to pace the projected threat well into the 21st century. Our FY 2008 request contains \$159 million for this effort.

Key upgrades to the DDG 51 AEGIS Weapon System (AWS) include an Open Architecture computing environment, along with an upgrade of the SPY Radar signal processor, addition of BMD capability, Evolved Sea Sparrow Missile (ESSM), improved USW sensor, Naval Integrated Fire Control-Counter Air (NIFC-CA) and additional other combat systems upgrades.

### **LEWIS & CLARK Dry Cargo/Ammunition Ship (T-AKE)**

T-AKE is intended to replace aging combat stores (T-AFS) and ammunition (T-AE) ships. Working in concert with an oiler (T-AO), the team can perform a "substitute" station ship mission to allow the retirement of four fast combat support ships (AOE 1 Class). \$456 million in FY 2008 supports funding the 11<sup>th</sup> T-AKE (final price will be determined through negotiations expected to be completed during the summer 2007). Lead ship was delivered in June 2006 and has completed operational evaluation (OPEVAL).

### **Tomahawk/Tactical Tomahawk (TACTOM)**

Tomahawk and Tactical Tomahawk missiles provide precision, all weather, and deep strike capabilities. Tactical Tomahawk provides more flexibility and responsiveness at a significantly reduced life cycle cost than previous versions and includes flex-targeting, in-flight retargeting, and 2-way communications with the missile.

Our \$383 million in this years request sustains the Tomahawk Block IV full-rate, multi-year procurement contract for Fiscal Years 2004-2008, yielding approximately 2,100 missiles. The projected inventory will accommodate campaign analysis requirements given historical usage data and acceptable risk.

## **F/A-18A/B/C/D Hornet**

The F/A-18 Hornet is Naval Aviation's principal strike-fighter. This state-of-the-art, multi-mission aircraft serves the Navy and Marine Corps, as well as the armed forces of seven allied countries. Its reliability and precision weapons delivery capability are documented frequently in news reports from the front lines. \$331 million in FY 2008 funds improvements to the original Hornet A/B/C/D variants providing significant warfighting enhancements to the fleet. These improvements include the Global Positioning System (GPS), Multi-functional Information Distribution System (MIDS), AIM-9X Sidewinder Missile/Joint Helmet-Mounted Cueing System (JHMCS), Combined Interrogator Transponder, Joint Direct Attack Munition/Joint Stand-Off Weapon delivery capability, and a Digital Communication System (DCS) for close-air support. Through these improvement and upgrades, the aircraft's weapons, communications, navigation, and defensive electronic countermeasure systems have been kept combat relevant.

Although the F/A-18A/B/C/D are out of production, the existing inventory of 667 Navy and Marine Corps aircraft will continue to comprise half of the carrier strike force until 2013, and are scheduled to remain in the Naval Aviation inventory through 2022.

## **CG(X)**

CG(X) is envisioned to be a highly capable surface combatant tailored for Joint Air and Missile Defense and Joint Air Control Operations. CG(X) will provide airspace dominance and protection to all joint forces operating in the Sea Base. Initial Operational Capability (IOC) is anticipated in about 2019. \$227 million in research and development for FY 2008 supports CG(X) development. The ongoing analysis of alternatives is considering various propulsion options. CG(X) will replace the CG-47 Aegis class and improve the fleet's air and missile defense capabilities against an advancing threat - particularly ballistic missiles.

### **Standard Missile-6 (SM-6)**

The Navy's next-generation Extended Range, Anti-Air Warfare interceptor is the SM-6. Supporting both legacy and future ships, SM-6 with its active-seeker technology will defeat anticipated theater air and missile defense warfare threats well into the next decade. The combined SM-6 Design Readiness Review / Critical Design Review was completed three months ahead of schedule with SM-6 successfully meeting all entrance and exit criteria. Ahead of schedule and on cost targets, our FY 2008 budget plan of \$207 million will keep this development effort on track for Initial Operational Capability in FY 2010.

### **Conventional TRIDENT Modification (CTM)**

CTM transforms the submarine launched, nuclear armed TRIDENT II (D5) missile system into a conventional offensive precision strike weapon with global range. This new capability is required to defeat a diverse set of unpredictable threats, such as Weapons of Mass Destruction (WMD), at short notice, without the requirement for a forward-deployed or visible presence, without risk to U.S. forces, and with little or no warning prior to strike. \$175 million is included in the FY 2008 request. The program and related policy issues are currently under review by the Office of the Secretary of Defense as part of the New Strategic Triad capability package.

### **Navy Unmanned Combat Air System (UCAS)**

The former J-UCAS program transferred from Air Force to Navy lead. The Navy UCAS will develop and demonstrate low observable (LO), unmanned, air vehicle suitability to operate from aircraft carriers in support of persistent, penetrating surveillance, and strike capability in high threat areas. \$162 million in FY 2008 research and development funds advance the programs objectives.

### **Joint Standoff Weapon (JSOW)**

JSOW is a low-cost, survivable, air-to-ground glide weapon designed to attack a variety of targets in day/night and adverse weather conditions from ranges up to 63 nautical miles. All variants employ a

kinematically efficient, low-signature airframe with GPS/INS guidance capability. JSOW is additionally equipped with an imaging-infrared seeker, Autonomous Targeting Acquisition (ATA) software, and a multi-stage Broach warhead to attack both hard and soft targets with precision accuracy. The \$156 million in FY 2008 funding continues production to build to our inventory requirements. A Block III improvement effort will add anti-ship and moving target capability in FY 2009.

#### **OHIO-Class SSGN**

OHIO-Class SSGN is a key transformational capability that can covertly employ both strike and Special Operations Forces (SOF) capabilities. OHIO (SSGN 726), FLORIDA (SSGN 728), and MICHIGAN (SSGN 727) were delivered from conversion in December 2005, April 2006, and November 2006 respectively and are conducting modernization, certification, and acceptance evaluation testing prior to deployment. GEORGIA (SSGN 729) is in conversion at Norfolk Naval Shipyard with delivery scheduled for September 2007. OHIO will be ready to deploy in November 2007, achieving Initial Operational Capability (IOC) for the SSGN Class. The \$134 million in the FY 2008 budget request is primarily for testing, minor engineering changes, and to procure the final replacement reactor core.

#### **Broad Area Maritime Surveillance (BAMS) Unmanned Aircraft System (UAS)**

BAMS is a post-9/11, Secretary of the Navy directed transformational initiative. \$117 million in research and development funding continues Navy's commitment to provide a persistent (24 hours/day, 7 days/week), multi-sensor (radar, Electro-Optical/Infra Red, Electronic Support Measures) maritime intelligence, surveillance, and reconnaissance capability with worldwide access. Along with Multi-Mission Aircraft, BAMS is integral to the Navy's airborne intelligence, surveillance, and reconnaissance (ISR) recapitalization strategy. BAMS is envisioned to be forward deployed, land-based, autonomously operated and unarmed. It will sustain the maritime Common Operational Picture (COP) and operate under the cognizance of the Maritime Patrol and Reconnaissance Force.

### **Long Range Land Attack Projectile (LRLAP)**

Long Range Land Attack Projectile (LRLAP) is the primary munition for the DDG 1000 Advanced Gun System (AGS). AGS and LRLAP will provide Naval Surface Fire Support (NSFS) to forces ashore during all phases of the land battle. All program flight test objectives have been met. Six of nine guided test flights have been successfully completed. Test failures have been isolated and corrective actions implemented with successful re-tests fired. \$74 million in FY 2008 supports continued development. Current ammunition inventory estimates are based on conventional ammunition calculation methods. A pending ammo study will account for increased LRLAP range and precision to better inform decisions regarding procurement schedule and total inventory objective.

### **MQ-8B Fire Scout Vertical Takeoff UAV (VTUAV)**

Navy Vertical Takeoff and Landing Tactical UAV (VTUAV) is designed to operate from all air capable ships, carry modular mission payloads, and operate using the Tactical Control System (TCS) and Tactical Common Data Link (TCDL). VTUAV will provide day/night real time reconnaissance, surveillance and target acquisition capabilities as well as communications relay and battlefield management to support the Littoral Combat Ship (LCS) core mission areas of Anti-Submarine, Mine, and Anti-Surface Warfare. It will be part of the LCS mission module packages supporting these warfare missions. \$71 million in development and procurement funding supports engineering manufacturing development, operational testing and achievement of initial operational capability in FY 2008.

### **Maritime Prepositioning Force (MPF) (Future)**

MPF(F) provides a scalable, joint sea based capability for the closure, arrival, assembly, and employment of up to the Marine Expeditionary Brigade sized force of 2015. It will also support the sustainment and reconstitution of forces when required. MPF(F) is envisioned to have utility in lesser contingency operations, and when coupled with Carrier or Expeditionary Strike Groups, will provide the nation a rapid response capability in anti-access or denial situations. \$68 million in research and

development in FY 2008 supports technology maturation required by our Sea Basing requirements.

**Direct Attack (DA) Munitions: JDAM, LGB, Dual Mode LGB, and Direct Attack Moving Target**

Inventories of direct attack munitions include Laser Guided Bombs (LGB) and Joint Direct Attack Munitions (JDAM) weapons; both are guidance kits for General Purpose bombs and strike fixed targets only. The LGB guides on a laser spot which provides precise accuracy in clear weather. JDAM provides Global Positioning / Inertial Guidance Systems (GPS/INS) giving accurate adverse weather capability (\$34 million in FY 2008). The Dual Mode LGB retrofit to LGB kits, procured in Fiscal Years 2006-2007, increases flexibility by combining laser and GPS/INS capabilities in a single weapon. The next evolutionary upgrade, Moving Target Weapon (MTW), will combine laser and GPS/INS guidance with moving target capability. Procurement is planned via a capability-based competition, with MTW upgrading existing JDAM and/or LGB kit inventories. \$29 million supports this on-going MTW effort in FY 2008.

**Harpoon Block III Missile**

Harpoon Block III represents the only long range, all weather, precise, ship and air launched, Surface Warfare anti-ship capability. \$44 million in FY 2008 supports development of a kit upgrade to existing Harpoon Block IC, the addition of a data link and GPS that will provide increased target selectivity and performance in the cluttered littorals.

**Pioneer Tactical Unmanned Aircraft Sensor (UAS)**

The Pioneer UAS System is a transportable Intelligence, Surveillance, and Reconnaissance (ISR) asset capable of providing tactical commanders with day and night, battlefield, and maritime reconnaissance in support of Marine expeditionary warfare and maritime control operations. The FY 2008 budget requests \$38 million in operations and maintenance sustainment and \$90 million in procurement for the Army's Shadow RQ-7B UAS as an interim replacement for the currently fielded Pioneer.

### **Extended Range Munition (ERM)**

The concept for expeditionary operations relies on sea-based surface fire support to aid in destruction and suppression of enemy forces. The Extended Range Munition (ERM) is a 5-inch rocket assisted guided projectile providing range and accuracy superior to that of conventional ammunition. The projectile uses a coupled GPS/INS Guidance System and unitary warhead with a height-of-burst fuze. \$30 million in FY 2008 research and development funding includes a 20-reliability demonstration before land-based flight and qualification testing. The program includes modifications to existing 5 inch guns and fire control systems. ERM will utilize the Naval Fires Control System as the mission planning tool.

### **Global Hawk Maritime Demonstration (GHMD)**

Using an existing Air Force production contract, the Navy procured two GHMD Unmanned Aerial Vehicles (UAV) and associated ground control equipment. GHMD will be used for developing Concept of Operations and Tactics, Training and Procedures for a persistent ISR maritime capability in conjunction with the manned P-3 aircraft. The GHMD return on investment will be risk reduction for the BAMS UAS Program. GHMD provides a limited, high altitude, endurance UAV platform capability 8 years before the planned FY 2014 IOC of BAMS. \$18 million in operations and maintenance and \$6 million in procurement of spares sustains the program in FY 2008.

### **Remote Minehunting System (RMS)**

RMS utilizes a diesel-powered, high endurance, off-board, semi-submersible vehicle to tow the Navy's most advanced mine hunting sonar, the AN/AQS-20A. The system will be launched, operated, and recovered from surface ships. RMS will provide mine reconnaissance, detection, classification, localization, and identification of moored and bottom mines. \$23 million in FY 2008 supports the fielding plan commencing this year providing limited systems for use on select DDGs, 48 RMSs for the Littoral Combat Ship (LCS) Mine Warfare Mission Packages, and an additional 16 vehicles as part of the LCS Anti-submarine Warfare Mission Packages.

### **Joint High Speed Vessel (JHSV)**

Navy, along with the Army, SOCOM and Marine Corps, is working to acquire a Joint High Speed Vessel (JHSV) that provides the required intra-theater lift capability necessary to meet each service's requirements. The acquisition of JHSV will address high-speed, intra-theater surface lift capability gaps identified to implement Sea Power 21, the Army Future Force operational concepts and SOCOM future operational plans. Additionally, it will improve Intra-theater lift currently provided by WESTPAC EXPRESS and other leased vessels. JHSV is currently in the Technology Development Phase with Joint Requirements Oversight Council (JROC) approval of the Capabilities Development Document (CDD) anticipated soon. Navy's research and development contribution in FY 2008 is \$19 million. Ultimate delivery of the first vessel is anticipated in 2010.

### **Aerial Common Sensor (ACS) - Future EPX (EP-3E Replacement)**

Navy is on a path to recapitalize the EP-3 airborne electronic surveillance aircraft, and our \$17 million in FY 2008 research and development funding contributes to this effort. ACS is the Navy's premier manned Airborne Intelligence, Surveillance, Reconnaissance (AISR) platform tailored to the maritime environment. ACS will provide data fusion and a robust reach-back capability allowing onboard operators to push intelligence to tactical commanders and operators in mission support centers. With a network-centric approach, ACS represents a significant capability in the Maritime Patrol and Reconnaissance Force Family of Systems including MMA and BAMS UAS.

### **Aegis Ballistic Missile Defense (BMD)**

Aegis Ballistic Missile Defense is the sea based component of the Missile Defense Agency's (MDA) Ballistic Missile Defense System (BMDS). It enables surface combatants to support ground-based sensors and provides a capability to intercept Short and Medium Range Ballistic Missiles with ship-based interceptors (SM-3 missiles). The recently started Gap Filler Sea-Based Terminal Program will provide the ability to engage Short Range

Ballistic Missiles (SRBMs) with modified SM-2 Block IV missiles from Aegis BMD capable ships. While all development funding is covered under the MDA budget, Navy has committed \$13 million in FY 2008 for operations and sustainment of Aegis BMD systems as Navy assumes operational responsibility.

Aegis BMD has been installed on three Cruisers and 13 Destroyers. All the Cruisers and three Destroyers are engagement capable. The balance of the Destroyers are Long Range Surveillance and Track (LRS&T) capable. Additional installations are planned for 2007.

In actual operations last July, U.S. and Japanese Aegis radar-equipped Destroyers successfully monitored North Korea's ballistic missile tests.

#### **21" Mission Reconfigurable Unmanned Underwater Vehicle System (MRUUVS)**

21" MRUUVS is a submarine launched and recovered, reconfigurable UUV system that will improve current capabilities in enabling assured access. It will provide a robust capability to conduct clandestine minefield reconnaissance and general Intelligence, Surveillance, and Reconnaissance (ISR) in denied or inaccessible areas. The MRUUVS program has been restructured, moving Initial Operational Capability (IOC) from Fiscal Year 2013 to 2016 when clandestine mine countermeasure capability from LOS ANGELES Class submarines will be delivered. Accordingly, the FY 2008 funding request has been adjusted to \$13 million. ISR capability and VIRGINIA Class host compatibility could arrive in follow-on increments approximately two years after IOC.