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## ***SECTION III - RECAPITALIZATION***

The Department's work in initiating modest transformational efforts is already paying solid dividends today as seen in our successes in Afghanistan. Naval capabilities such as precision, stealth, and persistent firepower enable the Navy and Marine Corps to defend the U.S. homeland and U.S. interests abroad today. However, in this uncertain world of widespread proliferation of technology, today's capabilities may not be able to address future threats. Our forces must not only be capable of fighting and winning, regardless of the mission, but they must also be able to project power in an anti-access and anti-denial environment. Naval forces must be able to conduct effective information operations, and at the same time, enjoy information assurance with available tactical data. The challenge of fielding a capabilities-based Naval force places a premium on risk management. This risk is both internal and external. We must not only strike a reasonable balance within our resources (people and readiness versus recapitalization and technology), but we must also deploy Naval forces that have the ability to address all potential threats while operating forward deployed with only modest reinforcement. The FY 2003 budget appropriately minimizes near-term risk, as shown in Section II, while putting forward a balanced investment in the technologies of tomorrow.

The Department's approach to transformation relies on two methods of application. One method is the near term innovation and modernization of our existing aircraft, ships, submarines and IT systems. The other methodology is the longer term development of seed technologies that will lead to invention and the discovery of new technologies that will ultimately lead to the development of next generation platforms and systems essential to transform the Navy and Marine Corps of the 21st Century.

The DoN is postured to modernize its equipment with advanced technology to meet future threats. The introduction of some new platforms will use Commercial Off the Shelf (COTS) technology, open architecture construction, and continue to leverage advances in information technology. This ensures the United States Navy's continued dominance of the open seas and littoral environments and allows for lower manning requirements, faster processing capabilities, and increased accuracy of our weapons systems. The Department needs to invest now with a focused program to secure Naval superiority well through the first half of the 21st Century.

The Department remains committed to continuing full support of major transformational programs like the Joint Strike Fighter, the CVN(X) next generation aircraft carrier, SSGN conversions and the DD(X) Destroyer, while continuing efforts to advance new technologies for weapons systems that create the "Navy after next" for this new millennium.

*Transform forces, capabilities, and institutions to extend asymmetric advantages.*

The total request for procurement funding has increased from \$24.8 billion in FY 2002 to \$25.8 billion in FY 2003.

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## *SHIP PROGRAMS*

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### *Surface Programs*

The Department's FY 2003 budget continues to address the requirement for the acquisition, modernization, and recapitalization of the world's preeminent surface fleet. Continuing to integrate emerging technologies, the Navy will ensure that tomorrow's fleet will remain on the cutting edge. This is manifested by development efforts for both the CVN(X) and DD(X) ship platforms and new weapon systems.

*... forces that can contend with uncertainty and embrace surprise...*

CVN-77, which was placed under contract in January 2001, is the foundation of the evolutionary approach towards the next generation aircraft carrier (CVNX) and will incorporate transformational technologies consisting of an integrated island design, propulsion plant improvements, improved design tools, and manpower/material support initiatives. Continuing the evolutionary approach, R&D efforts for CVN(X) continue in FY 2003. This approach will provide the means to develop, design and deliver the centerpiece of the Navy's Battle Groups for the 21st century ensuring American influence throughout the world. Construction of CVN(X) is scheduled to begin in FY 2007.



Two Arleigh Burke Class guided missile destroyer DDGs per year will be procured throughout the FYDP. In addition, the FY 2003 budget provides the necessary level of R&D funding to support the Navy's transition to the future sea dominant platform, DD(X). The DD21 program was terminated with the R&D funding shifted to advanced ship concept design for DD(X). DD(X) continues technology

development, proceeding to a planned FY 2002 contract award for a design agent to continue design through critical design review.

Funding to procure a fifth LPD-17 class ship is included in the FY 2003 budget. This budget also addresses the substantial incremental funding requirements needed across the FYDP to complete LHD-8, and continues the Landing Craft Air Cushioned (LCAC) modernization program with a service life extension for three craft in FY 2003.

The FY 2003 budget also provides for procurement of an Auxiliary Cargo and Ammunition Ship (T-AKE) in the National Defense Sealift Fund.

*Investment in S&T will enable new technologies to meet future threats*

Modernization efforts continue to advance new technologies for weapons systems that create the “Navy after next” for the new millennium. Interoperability testing capabilities have expanded significantly over the past year with implementation of a shore-based

Distributed Engineering Plant that links existing system development sites together to form a “virtual battleground.” This infrastructure is used to test and resolve interoperability issues ashore in advance of battle group work-up training.

Major Surface Weapons Quantities							
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Standard Missile	86	96	93	139	139	209	236
RAM	0	90	90	240	180	670	610
ESSM	29	26	146	182	384	441	298
Tactical Tomahawk	0	32	106	314	351	483	469

The Standard Missile program replaces ineffective, obsolete inventories with the procurement of more capable Block IIIB missiles. The Rolling Airframe Missile (RAM) program continues to mature through the multi-year procurement of the improved Guided Missile Launching System (GMLS) and procurement of the upgraded Block I missile, providing an enhanced guidance capability along with a helicopter, air and surface (HAS) mode. In addition to Standard Missile and RAM, the FY 2003 budget provides funding for the a full rate production of the Evolved Sea Sparrow Missile (ESSM).

Several land attack R&D efforts critical to future littoral warfare, continue in FY 2003, including the Extended Range Guided Munition (ERGM), the 5”/62 gun, the Advanced Gun System (AGS) and the Naval Fires Control System (NFCS). ERGM contains an internal global positioning system and inertial navigation system that provide state-of-the-art guidance to surface-fired munitions. The AGS will provide the next generation of surface combatants with a modular large caliber gun system including an automated magazine handling system. The NFCS will use existing fire control infrastructure to serve as the nerve center for surface land attack by automating shipboard land attack battle management duties, incorporating improved land attack weapons systems, and utilizing battlefield digitization. In addition, low rate initial production of Tactical



*... defeat the effort of adversaries to impose their will on the United States, its allies, or friends*

Tomahawk, which begins in FY 2002, continues in FY 2003 with a significant ramp up in quantities. Full rate production is planned for FY 2004 which will introduce flexibly retargeted precision munitions into the Fleet.

Chart 11 displays shipbuilding quantities and prior year completion funding for FY 2002 and FY 2007.

**Chart 11 - Shipbuilding Programs**

	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07
CVN	0	0	0	0	0	1
SSN 774	1	1	1	1	1	1
DDG 51	3	2	2	2	2	2
DDX (R & D)	0	0	0	1	0	0
LPD 17	0	1	1	1	1	1
LHD	1	0	0	0	0	0
JCC	0	0	0	0	1	2
MPF(F) (NDSF)	0	0	0	0	0	1
T-AKE (NDSF)	1	1	1	2	2	3
<b>Total New Construction</b>	<b>6</b>	<b>5</b>	<b>5</b>	<b>7</b>	<b>7</b>	<b>11</b>
SSGN	0	2	2	0	0	0
Cruiser Conversion	0	0	1	2	4	4
T-AGS	0	0	0	0	1	0
<b>Total Conversions</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>4</b>
CVN RCOH	1	0	0	1	0	0
SSN/SSBN re fueling	2	1	2	1	3	4
LCU	0	0	0	5	5	5
LCAC SLEP	2	3	4	4	6	6
<b>PY Completion \$M</b>	<b>729</b>	<b>644</b>	<b>645</b>	<b>744</b>	<b>185</b>	<b>0</b>

Goal is 8 to 10 Ships per Year

**Submarine Programs**



The Navy covertly projects power with its fleet of modern SSN 688, Seawolf and Trident submarines. Their firepower, stealth, sensors and communications equipment will enable submarines to act as force multipliers in every conceivable scenario. This budget highlights the Navy’s ongoing effort to modernize its existing submarine fleet with

the latest technology ensuring the viability of these critical ships while, at the same time, continuing to replace aging fast attack submarines with the new Virginia Class submarine. Construction of the first two Virginia Class submarines began in FY 1998 and FY 1999 under the teaming arrangement with General Dynamics and Newport News Shipbuilding Company.

Construction for the third hull began in FY 2001, and the fourth hull of the class will commence construction in FY 2002. Funding to procure the fifth ship of the Virginia Class is included in FY 2003.

FY 2003 also includes funding to continue design work to convert a total of four Trident SSBNs to SSGNs, providing covert conventional strike platforms capable of carrying 150 Tomahawk missiles. The FY 2003 budget supports the refueling of the first two submarines and advance work for their conversion in FY 2004.

The FY 2003 budget reflects a balanced approach to funding Advanced Submarine Technology programs through the continued development of sonar, ESM and optic sensors, new processing algorithms, electromagnetic silencing, and advanced propulsion systems. These systems, depending on their availability, will be incorporated into the Virginia Class submarines and may also be backfit to 688, Seawolf and Trident submarines to avoid maintenance costs for older legacy systems.

*...forward stationed or rotational forces supporting our forward posture...*

These development efforts will greatly enhance affordability and maintainability of the submarine force.

A number of submarine modernization efforts continue in FY 2003. The Acoustic Rapid COTS Insertion (ARCI) program will complete installation of the first two phases of ARCI units on all SSNs by FY 2002 and will commence installation of Phase 3 and 4 improvements. These units, which provide significant sonar enhancements for our submarines have been extraordinarily successful and have validated the Navy's decision to use commercially available technology.

The FY 2003 budget also reflects the scheduling of one 688 Class submarine engineered refueling overhaul (ERO), which will also receive modernization to enhance combat capability throughout the submarines' operational life. The FY 2003 budget also funds important submarine communication suite improvements. The procurement and installation of improved antennas and automated data processing equipment will continue to increase the throughput and operational flexibility of submarine radio rooms.

<b><u>Also refer to Appendix A for more information:</u></b>	<b><u>Table</u></b>
Shipbuilding and Conversion Navy	A-12
Weapon Procurement Navy	A-11

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## ***AVIATION PROGRAMS***

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The Department's FY 2003 budget is structured to maintain the continued qualitative superiority of Navy and Marine Corps Aviation for the next

generation. The budget continues to maximize the return on procurement dollars, primarily through the use of multi-year procurements (MYP) for F/A-18E/F, E-2C and MH-60S. Robust development funding is also provided for JSF, MV-22, UH-1Y/AH-1Z and MH-60R.



The F/A-18E/F is the centerpiece of Navy combat aviation and reached its Initial Operational Capability in September of 2001. The FY 2003 budget continues to support this platform and the capabilities it provides to the warfighter by including additional funding for weapons integration. Further, the budget for the F/A-18E/F also funds required correction of discrepancies to ensure these aircraft do not prematurely reach their life limits. The Department will continue to procure the V-22 Osprey at the minimum sustaining rates through a continued development phase. The goal of the revised MV-22 development program is to ensure the Osprey is a safe, reliable aircraft capable of meeting all Marine Corps requirements. This goal is achieved through a robust flight testing program. Funding in FY 2003 also supports key elements of the helicopter master plan. To ensure the continued success of the H-1 development program, funding is requested in R&D in FY 2003 to support the H-1 remanufacture program. When procured, these aircraft will provide numerous capability improvements for the Marine Corps, including increased payload, range, and time on station, improved sensors, lethality and 85% component commonality. Other major R&D programs include the active electronically scanned array (AESA) radar for the F/A-18E/F and the continuation of a multi-mission aircraft program to replace the P-3 Maritime Patrol and EP-3 Signal Intelligence aircrafts. Joint aircraft programs also continue to be an important component of a naval acquisition strategy, with the Joint Strike Fighter continuing in the Engineering and Manufacturing Development phase in FY 2003.

Further, to continue with the transformation goals, the Department has budgeted R&D funding for the E-2 Radar Modernization Program (RMP). Additionally, the Department has included funding to support procurement of required capabilities in the fleet, such as Advanced Targeting Forward Looking Infra-Red (ATFLIR) and Joint Helmet Mounted Cueing Systems (JHMCS).

Chart 12 displays the Department's new production and remanufactured aircraft programs.

**Chart 12 - Aircraft Programs**

	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07
FA/18 E/F	48	44	42	43	50	55
E-2C	5	5	2	3	4	4
V-22	9	11	13	15	20	27
MH-60S	13	15	13	22	26	27
T-45TS	6	8	0	0	0	0
JPATS	6	0	0	0	0	24
MH-60R	0	0	6	10	10	10
UH-1Y/AH1Z	0	0	9	11	22	28
UC-35	1	0	0	1	2	2
C-40A	0	0	0	0	3	1
C-37	0	0	0	0	2	0
KC-130J	2	0	0	0	4	5
MMA	0	0	0	0	0	2
JSF	0	0	0	0	4	8
<b>TOTAL</b>	<b>90</b>	<b>83</b>	<b>85</b>	<b>105</b>	<b>147</b>	<b>193</b>

**Goal 180 to 210 Aircraft per Year**

Within our aircraft modification program, we continue procurement of the AV-8B Open System Core Avionics Requirements (OSCAR) program to update obsolete avionics and also continue F/A-18 Radar Upgrade, structural and safety improvements. Additionally, funding provides for the Anti-Surface Warfare Improvement Program (AIP) efforts; Update III Common Configuration program; and upgrades to tactical aircraft electronic warfare countermeasures capabilities.

Procurement of the EA-6B Improved Capability (ICAP) III starts in FY 2003. This upgrade will provide the Prowler with a new selective re-active receiver with integrated communications, jamming, and connectivity capabilities. This increased capability will be a welcome addition for an aircraft, which experienced extremely high OPTEMPO during the Kosovo conflict.

The Department is ramping up the production of all Precision-Guided munitions (PGMs) in FY 2003. Our PGM employment during Desert Storm, Bosnia, and in the North Arabian Sea during Operation Enduring Freedom, has provided our commanders with all-weather, day and night, precision attack capable of being delivered well inland on demand. Joint Standoff Weapon (JSOW) baseline and submunition variant production restarts in FY 2003 after completion of incorporating corrective ECP's to previously delivered weapons. JSOW unitary variant also starts low rate initial production in FY 2003. SLAM-ER production

is increased from minimum sustaining rate in FY 2002 to an economic production rate of 120 weapons in FY 2003 to provide the Fleet with an effective and affordable Standoff Outside Point Defense capability. The AIM-9X Sidewinder air-to-air missile continues Low Rate Initial Production and will provide a significantly increased capability required to defeat existing threats. Joint Direct Attack Munition (JDAM) full rate production is also ramped up in FY 2003 to maximum production capability. This munition will answer the need identified during Operation Desert Storm and proven out in Operation Enduring Freedom for a more accurate weapon delivery capability in adverse weather conditions and from medium and high altitudes. Finally, the Department continues the procurement in FY 2003 of the Advanced Medium Range Air-to-Air Missile, the next generation of all weather, all environment, radar guided missile for air defense.



Major Aviation Weapons Quantities							
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
JSOW	29	0	363	555	522	502	424
SLAM-ER	30	30	120	84	90	0	0
AIM-9X	0	105	295	142	148	151	153
JDAM	2,072	1,417	9,880	7,626	5,964	7,230	6,456
AMRAAM	63	57	100	55	48	48	48
JASSM	0	0	0	0	0	0	30

<b>Also refer to Appendix A for more information:</b>	<b>Table</b>
Aircraft Procurement Navy	A-10
Weapons Procurement, Navy	A-11

## ***MINE WARFARE***

Mine warfare remains a critical element of the Department's modernization program. In keeping with the emphasis on organic mine warfare, the budget includes full funding to meet scheduled battle group deployments while maintaining full funding for a potent and dedicated Mine Countermeasure (MCM) force. The FY 2003 budget includes funding for development and fielding of several next generation organic MCM systems including the Airborne Laser Mine Detection System (ALMDS), the Airborne Mine Neutralization System (AMNS), and the Rapid Airborne Mine Clearance System (RAMICS). Funding is also provided for the development of a single common console for all organic Airborne Mine Counter Measures (AMCM) systems. This action reflects the Department's intent to establish a mid-term organic mine warfare capability that is fully integrated on the MH-60 helicopter.

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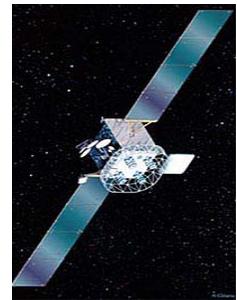
## ***C4I PROGRAMS***

The Navy's Command, Control, Communication, Computers and Intelligence (C4I) programs represent the backbone of the combat capability of the US Naval forces. Leveraging the most advanced technologies available in the world today, the C4I programs make "One Team, One Fight" a reality. The C4I evolutionary plan revolves around four key elements: connectivity; a common tactical picture; a sensor-to-shooter emphasis; and information/command and control warfare.

The central theme shaping the Navy's budget for C4I programs is the concept of

*"... leveraging information technology and innovative concepts to develop an interoperable, joint C4ISR architecture and capability that includes a tailorable joint operational picture."*

Information Technology for the 21st Century (IT-21). IT-21 provides the common backbone for



command, control, communications, computers and intelligence systems to be linked afloat, ashore, and to the Internet. The Integrated Shipboard Network Systems (ISNS) Local Area Networks (LANs) afloat and local and regional networks ashore serve as the principal element of this effort. These networks integrate afloat tactical and tactical support applications with enhanced satellite systems and ashore networks. FY 2003 funding accelerates ISNS procurement and installation to achieve a Full Operational Capability (FOC) for all platforms by FY 2007.

IT-21 connectivity is critical because it provides the managed bandwidth for timely transmission of information. The Satellite Communications Systems program continues expansion of available bandwidth to the warfighter.

Funding levels beginning in FY 2003 and extending across the FYDP have significantly increased to support the continued development of the Advanced Narrowband System/Mobile User Objective System (ANS/MUOS). This increase in funding accelerates procurement of ANS/MUOS to meet an Initial Operational Capability (IOC) in FY 2007 and FOC in FY 2013. ANS/MUOS will provide the DOD's Ultra High Frequency (UHF) satellite communication requirements of the 21st century.

FY 2003 funding enables the development of Advanced EHF (AEHF) terminals, which supports the synchronization with the Air Force's Advanced Wideband

*"...enhancing the capability and survivability of space systems and supporting infrastructure."*

System (AWS/AEHF) satellite program to meet a FOC in FY 2010. FY 2003 funding accelerates the effort to transition the Navy's Digital Modular Radio (DMR) to the maritime version of the Joint Tactical Radio System (JTRS) and also supports the

development and procurement of the JTRS – Maritime/Fixed (M/F) Cluster. This joint radio system is a single family of radios that will replace and integrate various incompatible service radios.

Funding in FY 2003 also continues to emphasize the procurement and installation of Global Broadcast System (GBS), Super High Frequency (SHF), and Extra High Frequency (EHF) terminals and provides for upgraded power distribution and enhanced connectivity “drops” accomplished during equipment installations.



The Sensor-to-Shooter concept focuses on the process of putting a weapon on target using all available sensor data. Funding continues in FY 2003 for the Advanced Tactical Data Links (ATDLS) system, ensuring timely transmission of surveillance, targeting, engagement, combat identification, and battle damage assessment information over IT-21 networks.

*“...deny enemies sanctuary by providing persistent surveillance, tracking and rapid engagement ...”*

Information Warfare/Command and Control Warfare (IW/C2W) is the integrated use of operations security, military deception, psychological operations, electronic warfare and physical destruction to deny information to, influence, degrade or destroy an adversary’s C2 capabilities, while protecting friendly C2 capabilities against such actions.

*“...assuring information systems in the face of attack and conduct effective information operations.”*

FY 2003 funding provides for the procurement of Common Data Link – Navy (CDL-N) systems and continues funding for the Maritime Cryptologic Systems for the 21st Century (MCS-21). In the Information Systems Security Program (ISSP), FY 2003 funds the procurement of Mission Critical Secure Terminal Equipment (MC/STE). FY 2003 funding continues to provide cryptologic equipment and secure communications equipment for Navy ships, shore sites, aircraft, the Marine Corps, and the U.S. Coast Guard.

Finally, the Department has stepped up the efforts to web enable C4I systems which allows sailors on ship or shore with a web browser to access software applications electronically from a single workstation, such as the Navy Tactical Command Support System.

<b><u>Also refer to Appendix A for more information:</u></b>	<b><u>Table</u></b>
Other Procurement, Navy	A-13
Procurement, Marine Corps	A-14

## MARINE CORPS GROUND EQUIPMENT

This category of our budget supports the development and subsequent fielding of all equipment used by Marine Corps ground forces. Virtually every major end item is approaching, or has exceeded, its programmed service life. While the FY 2003 budget addresses the much needed replacement of our legacy systems, the pace of modernization remains our greatest concern. This budget also reflects the continuing effort to reach the Marine Corps goal of satisfying the combat requirement through the FYDP while meeting annual ammunition training requirements.



*Deploy forces to assure friends and deter potential adversaries*

Several major replacement, remanufacture and modernization programs are initiated or continued in this budget. They include the Assault Amphibious Vehicle (AAV), Reliability, Availability, and Maintainability/Rebuild to Standard (RAM/RS) program, the Lightweight (LW) 155 mm Howitzer, and the Light Armored Vehicle (LAV) Service Life Extension Program (SLEP). Marine Corps continues procurement of the LAV SLEP, which will ensure that the LAV's combat capabilities are preserved through FY 2015. This budget also continues procurement of the High Mobility Multi-purpose Wheeled Vehicle (HMMWV2) that will update the existing aging inventory. This budget represents the beginning of the procurement of AAV, with a production representative, full-up system, live-fire test



vehicle that will be fielded subsequent to testing. In addition, the FY 2003 budget also includes funding for High Mobility Artillery Rocket System (HIMARS), an artillery system capable of firing rockets for long-range indirect fire support (45km or greater). The FY 2003 budget funds the completion of the Medium Tactical Vehicle Replacement (MTVR), which replaced

Major Marine Corps Ground Equipment Procurement Quantities							
	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
HMMWV2	2,071	1,625	1,667	1,304	2,813	3,358	3,371
AAAV	0	0	1	0	23	24	54
MTVR	2,001	1,959	1,405	0	0	0	0
LW155	0	0	34	60	110	120	53
IRV	22	8	0	0	0	0	0

the Marine Corps fleet of 5-ton trucks. The Lightweight 155mm Howitzer will provide significant improvements over the current M198 system. Its lighter weight and increased lethality will allow for rapid deployment and improved accuracy while reducing the number of personnel required to operate. The LW-155 is compatible with all US and NATO 155mm rounds and its smaller footprint reduces the strategic sealift required.

Significant resources in the FY 2003 RDTE,N budget are dedicated to the AAV. AAV is currently in the Systems Development Demonstration (SDD) Phase of the program. It will continue to design and development testing of the AAV (P) and AAV (C). The program will begin to initiate development of the AAV training courseware. Smart Work initiatives which are designed to reduce the production and operational support costs of the AAV are also funded in this budget. The AAV program will continue production of nine Engineering and Manufacturing Development (EMD) prototypes in FY 2003.



The FY 2003 RDTE,N budget continues to finance Marine Corps-led experimentation with future tactics, concepts and innovations involving both Marine and Navy forces. The Marine Corps Warfighting Laboratory is the centerpiece for operational reform in the Corps, investigating new and potential technologies and evaluating their impact on how the Marine Corps organizes, equips and trains to fight in the future. Additionally, the budget continues to finance Non-Lethal Weapons (NLW) research and development – a program for which the Marine Corps serves as the Executive Agent. In the FY 2003 budget, we seek to leverage developing and emerging technologies that have applications across the spectrum of warfare. Specific R&D efforts will focus on NLW capabilities that are counter-personnel and counter-material in nature.

<b><u>Also refer to Appendix A for more information:</u></b>	<b><u>Table</u></b>
Procurement, Marine Corps	A-14
Procurement of Ammunition, Navy and Marine Corps	A-15

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## ***RESEARCH AND DEVELOPMENT SUPPORT***

Started in FY 2002, the Department will continue to refocus how it transitions Science and Technology (S&T) to the acquisition community and the warfighter.

<p><i>Develop technologies that will enable asymmetric advantages against future adversaries</i></p>
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That new focus will maintain a broad base of science and technology to feed into the research and development transition process while ensuring adequate coverage for military superiority against technological surprise. The focus is on advanced

Future Naval Capabilities (FNCs) to the warfighter and to support the technological innovation to meet the National Military Strategy. These desired future capabilities are approved by the DoN Science and Technology Corporate Board. Technology products resulting from the investment in Future Naval Capabilities will transition to acquisition programs throughout the FYDP. Such programs include, but are not limited to: next generation warships (especially those with all-electric systems, advanced propulsion, and reduced manning), advanced combat systems for the Marine Corps, and advanced tactical aircraft and weapons.

RDT&E Management Support (6.6) provides funding for installations required for general research and development use. These efforts include the test and evaluation support programs required to operate the Navy's test range sites, R&D aircraft and ship funding, and threat simulator development efforts. This funding level reflects required R&D infrastructure support commensurate with overall Navy force structure and facilities management consolidations. Seventy percent of this funding, or about \$482 million in FY 2003, the same as FY 2002, supports the Major Range and Test Facilities Base (MRTFB), necessary to conduct independent test and evaluation assessments for all Navy ship, submarine, aircraft, weapons, combat systems and other development, acquisition and operational system improvements.

The remaining categories of research are platform-related and have been discussed as applicable in the previous sections. Table 16 provides summary data at the budget activity level for the major DoN Research, Development, Test and Evaluation, Navy efforts.

<p><u>Also refer to Appendix A for more information:</u> Research, Development, Test and Evaluation, Navy</p>	<p><u>Table</u> A-16</p>
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**Table 16**  
**Department of the Navy**  
**Research, Development, Test and Evaluation**  
*(In Millions of Dollars)*

	FY 2001	FY 2002	FY 2003
<b><u>Significant RDT&amp;EN Areas</u></b>			
Operational Systems Development	\$2,189	\$2,343	\$2,746
Science and Technology	1,813	2,051	1,582
Basic Research	(385)	(405)	(410)
Applied Research	(636)	(777)	(580)
Advanced Technology Development	(791)	(870)	(592)
Joint Experimentation	(65)	(103)	(98)
R&D Management Support	815	682	688
<b><u>Major Platform Efforts:</u></b>			
Joint Strike Fighter	\$341	\$760	\$1,727
V-22	218	543	420
DD(X)	532	530	961
C4I	322	331	440
CVN(X)	120	123	81
Virginia Class SSN	207	205	238
F/A-18	221	252	204
SH-60R	78	148	89
Broad Area Maritime Surveillance UAV	121	73	206