

# UNCLASSIFIED

FY 2006/2007 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET  
Exhibit R-2

DATE: Feb 2005

BUDGET ACTIVITY: 07  
PROGRAM ELEMENT: 0205658N  
PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

COST: (Dollars in Thousands)

Project Number & Title	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
<b>Total PE</b>	12,009	7,151	3,917	3,405	3,521	3,696	3,798	3,904
R0834      LABORATORY FLEET SUPPORT	5,275	3,783	3,917	3,405	3,521	3,696	3,798	3,904
R9111      LASH MCM/ISR	6,734	3,368	0	0	0	0	0	0

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The Naval Science Advisor Program ensures that the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T), develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. In addition, Science Advisors facilitate and disseminate Command Capability Issues (CCIs) provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). The Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. The result is that the Science Advisors provide insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term S&T programs. The program develops leaders among the civilian scientists and engineers in the Naval Research Enterprise (NRE). Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Naval Science Advisor Program is unique in that it enables a continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

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## PROGRAM CHANGE SUMMARY:

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2005 President's Budget Submission	10,626	3,821	3,915	3,370
Cong Rescissions/Adjustments/Undist. Reductions	0	-68	0	0
Congressional Action	0	3,400	0	0
Execution Adjustments	1,572	0	0	0
Non-Pay Inflation Adjustments	-6	0	0	0
Program Adjustments	0	-2	-2	-2
Rate Adjustments	0	0	4	37
SBIR Assessment	-183	0	0	0
FY 2006/2007 President's Budget Submission	12,009	7,151	3,917	3,405

## PROGRAM CHANGE SUMMARY EXPLANATION:

Technical: Not applicable.

Schedule: Not applicable.

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PROGRAM ELEMENT: 0205658N

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT NUMBER: R0834

PROJECT TITLE: LABORATORY FLEET SUPPORT

COST: (Dollars in Thousands)

Project Number & Title	FY 2004 Actual	FY 2005 Estimate	FY 2006 Estimate	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate
R0834 LABORATORY FLEET SUPPORT	5,275	3,783	3,917	3,405	3,521	3,696	3,798	3,904

**A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The Naval Science Advisory Program ensures that the Fleet/Force (F/F) helps shape the Department of the Navy (DoN) investment in Science and Technology (S&T), develops teaming relationships to rapidly demonstrate and transition technology, supports development of technology-based capability options for naval forces, and enables warfighting innovations based on technical and conceptual possibilities. This is accomplished through proactive connectivity and collaboration between DoN S&T and Joint, Navy, and Marine Corps commands worldwide. The program accomplishes this through several methods. It provides Science Advisors to Joint, Navy, and Marine Corps operational and strategic planning commands. In addition, Science Advisors facilitate and disseminate Command Capability Issues (CCIs) provided by the F/F Commanders to the Director of Navy Test and Evaluation and Technology Requirements (OPNAV N091). The Science Advisors collaborate with the F/F to identify specific solutions to known operational capability needs and provide the means to develop and demonstrate prototype systems. The result is that the Science Advisors provide insight into issues associated with Naval Warfighting Capabilities, thereby influencing long term S&T programs. The program develops leaders among the civilian scientists and engineers in the Naval Research Enterprise (NRE). Upon completion of their tours, Science Advisors return to the NRE with first hand knowledge of the F/F, warfighting issues, and strategic decision making. The Navy Science Advisory Program is unique in that it enables a continuous communication and collaboration between the warfighters, the technical community, and strategic development commands.

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## B. ACCOMPLISHMENTS/PLANNED PROGRAM:

	FY 2004	FY 2005	FY 2006	FY 2007
NAVAL SCIENCE ADVISOR PROGRAM	5,275	3,783	3,917	3,405

### FY 2004 Accomplishments:

The Science Advisors are a conduit between the Fleet/Force, the Office of Naval Research (ONR) and the Naval Research Enterprise: Specific Fleet Accomplishments are:

- Science Advisor, Commander Seventh Fleet (COMSEVENTHFLT), actively supported the Undersea Dominance/Task Force Anti-Submarine Warfare (ASW) Demonstrations. Had ongoing discussions with the leadership of the Littoral ASW Future Naval Capability (FNC) and its prioritization of efforts. Continued ongoing efforts in Anti-Terrorism/Force Protection (AT/FP) technology.
- Science Advisor, Commander Fleet Forces Command (CFFC), established a strong CFFC presence in the Department of Defense, Deputy Assistant Secretary of the Navy (DASN) Research, Development, Test and Evaluation (RDT&E), Science and Technology (S&T) assessment process, including the ONR review and the development of the S&T Vision statement. Identified and maintained a close coupling between the OPNAV (N8) requirements organization and the Future Naval Capabilities (FNC) Integrated Process Teams (IPTs). Improved the Sea Trial engagement with ONR, Systems Commands, Warfare Centers, and the Fleet Collaborative Teams through senior leadership briefs and updates. Established a new level of engagement with the Advanced Concept Technology Demonstration (ACTD) Program. Worked extensively on processes in the S&T community including Sea Trial, ACTDs, FNCs, SBIRs, N6/N7 Gap Analysis, etc.
- Science Advisor, Joint Forces Command (JFCOM), participated in the JFCOM Joint Test and Evaluation (JT&E) arena, led feasibility studies and participated in the JT&E Senior Advisory Council. Worked as the JFCOM Liaison to the Defense Advanced Research Projects Agency (DARPA) on a Collaborative Partnership between DARPA and JFCOM. Established a broader S&T Advisor office at JFCOM through the addition of a part-time Army Science Advisor, and worked to add an Air Force Science Advisor. Addressed technology shortfalls to support the development of an Operational Net Assessment.

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- Science Advisor, Commander U.S. Naval Forces Central Command (COMUSNAVCENT), worked with Science Advisor, Commander U.S. Naval Forces Europe (COMUSNAVEUR), on Coalition Chat Line in the Commander U.S. Forces Central Command (NAVCENT) Area of Responsibility (AOR). Worked on the deployment of a floating security barrier for the Mina Salman pier area and distribution of Phraselators within NAVCENT area. Investigated the security and safety of potable water at NAVCENT, as well as candidate technologies for the Combating Terrorism Readiness Initiative Fund.
- Science Advisor, Commander Submarine Forces Atlantic Fleet (COMSUBLANT), provided wide-ranging support to the COMSUBLANT staff on science and technology issues. Involved with the USS VIRGINIA Class advanced sail analysis, the ASW Improvement Program semi-annual meetings, and the Unmanned Underwater Vehicle (UUV) Master Plan workshop. Worked with Naval Meteorology and Oceanography Command to develop S&T programs to better understand the operational environment.
- Science Advisor, Commander Naval Surface Pacific Fleet (COMNAVSURFPAC), was involved with many aspects of the Littoral Combat Ship (LCS) ASW Mission Module ranging from review of the Operational Requirements Documents (ORD) to consideration of use of X-craft as a surrogate for LCS in experimentation. Maintained a strong working relationship with the Surface Ship Technology (SURFTECH) organization. Worked projects that included a wireless acoustic ASW sensor array and a continued effort on a near-term mine avoidance capability for surface combatants.
- Science Advisor, Commander Third Fleet (COMTHIRDFLT), pursued as a primary focus the Collaborative Operations and Responsive Technology Experimentation (CORTEX). Worked with the Technical Solutions Programs to review line of sight communications efforts.
- Science Advisor, Commander Sixth Fleet (COMSIXTHFLT) (C6F), worked to support teams within the C6F AOR with biometric systems for identification of persons of interest and non-lethal weapons to be used during special operations. Worked with the C6F staff on Common Operating Picture experimentation.
- Science Advisor, (COMUSNAVEUR), evaluated the ACTD in the European Command (EUCOM) AOR. Led the Coalition Chat Line Project and worked to transition this demonstration project into acquisition.
- Science Advisor, Commanding General 1st Marine Expeditionary Force (CG I MEF), addressed key concerns in the Improvised Explosive Device (IED) detection, protection from IED effects, and remote sensor networks.
- Science Advisor, Strategic Studies Group (SSG), supported the research phase of SSG's key S&T study and synthesized the results of the research (i.e., Adaptive Force, Globalized FORCENet & Decision Making, Homeland Protection, Persistent Maritime Power Projection and Sea Superiority). Continued to support each of the SSG Concept Generation teams.

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- Science Advisor, Joint Interagency Task Force (JIATF)-South, pursued numerous projects and experiments in the JIATF-South AOR, including Counter Drug Unit upgrades to P3 maritime patrol aircraft, use of robotic watercraft for surveillance, experimental use of Global Hawk Unmanned Aerial Vehicle (UAV) as counter drug maritime surveillance platforms, and tested a tethered aerostat radar system.
- Science Advisor, Commander Marine Force Atlantic Force (COMMARFORLANT), worked on several experiments associated with Blue Force Tracking and Combat Identification (CID). Regularly interacted with other Marine Corps Science Advisors on the Pilot Electronic Kneeboard in conjunction with Naval Air Systems Command (NAVAIR) and several language translation efforts.
- Science Advisor, Commander Naval Air Systems Command (COMNAVAIRFOR), developed the Aircraft Carrier Situational Awareness System and participated on the Naval Aviation Simulation Master Plan (NASMP) IPT, investigated bio-fouling of west coast carriers, and managed a variety of Tech Solution projects.
- Science Advisor, Chief of Naval Operations (CNO) Executive Panel (CEP), supported the CEP Near Term Assessment Study with emphasis on technology issues. Worked with the Office of Secretary of Defense (OSD) Policy sub-groups on technology issues. Coordinated the SSG in a mentoring session.
- Science Advisor, CG II MEF, was involved with a number of force protection initiatives and coordination of demonstrations during Combined Joint Task Force Exercises (CJTTFEX). Participated in several language translation technology initiatives. Coordinated the Long Range Acoustic Device (LRAD) briefs and Non-Lethal Weapons demonstrations at II MEF. Participated in the development of Force Protection briefs by Applied Research Corporation. Supported the Deka Generator Evaluation by 2nd Marine Aircraft Wing (MAW). Supported the coordination of the Grenadier Brat (GB) and Coalition Combat ID (CCID) demonstrations during CJTTFEX and continued the evaluation of Active Audio Tool.
- Science Advisor, Commander Marine Force Pacific (COMMARFORPAC), was involved in near-term technologies for counter-IED, counter-Man-Portable Anti-Defense System (MANPADS), counter-shooter, and Non-Lethal Weapons technology. Regularly interacted with other Marine Corps Science Advisors on various language translation technologies.
- Science Advisor, Commander Pacific Fleet (COMPACFLT), efforts have focused on ASW. Continued as a member of Task Force ASW and interacted heavily with the leadership of the Littoral ASW FNC. Coordinated the development of an ASW technologies assessment.
- Science Advisor, Naval Supply Systems Command (NAVSUP), researched Radio Frequency Identification (RFID) applications for NAVSUP. Worked a condition-based maintenance program to review the use of wireless networks to communicate machinery health information to a host system. Managed the Collaborative Logistics Program for NAVSUP.

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- Science Advisor, Navy Warfare Development Center (NWDC), explored multiple S&T-related initiatives, including the NAVAIR DSS (Decision Support System), the MOVES Institute XMSF (eXtensible Modeling and Simulation Framework), the unsolicited Digital Harbor proposal, the ONR/HAI (Hydro Acoustics, Inc.) proposal, FnCE (FORCEnet Composable Environment), and eXtendable Technical C4I Framework (XTCF) Sea Trial. Coordinated special experimentation projects for the Sea Trial initiative. Represented NWDC in various forums and project planning meetings. Worked with CFFC to continue to improve the Sea Trial Information Management System (STIMS). Worked very closely with the Director, Naval Undersea Warfare Center (NUWC).
- Science Advisor, Naval Criminal Investigation Service/OPNAV (NCIS/N34), oversaw the implementation of technologies at the North Island AT/FP Technology Test Bed. Continued to manage the Area Security Operations Command and Control System (ASOCC). Worked with the Technology Solutions Program to develop multiple publications on AT/FP.
- Science Advisor, U. S. Pacific Command (USPACOM), participated in counter-IED systems installation in OIF with the Naval Explosive Ordnance Disposal Technology Division. Worked closely with Deputy Under Secretary of Defense for Advanced Systems and Concepts (DUSD AS&C) to coordinate ACTD efforts in the PACOM AOR. Participated in the annual staff talks with Singapore.
- Science Advisor, Commander Submarine Forces Pacific Fleet (COMSUBPAC), developed an action plan to establish an ongoing partnership between the Fleet, the Meteorological/Oceanographic (METOC) community, and the oceanographic research community. Involved the National Defense Center of Excellence for Research in Ocean Acoustics (CEROS) programs and worked on issues for at-sea testing events.
- Science Advisor, Commander Special Warfare Command (COMNAVSPECWAR), coordinated the fielding of an optics detection system to assist the SEALs. Reviewed the Naval Surface Warfare (NSW) Technology Base program to give more direct input from the SPECWAR community. Identified sources and routes of transition funding to take capabilities under development and mature them to a point where they are ready for procurement.
- Science Advisor, OPNAV N81, participated in a N81 initiative to assess the Navy's role in the Global War on Terror, which extended to all aspects of the issue from technology to training to force structure. Advocated for inclusion of promising technologies into the modeling effort in support of PR07 to quantify/highlight ongoing S&T work.

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## **FY 2005 Plans:**

Continue FY 04 efforts with 25 Science Advisors.

## **FY 2006 Plans:**

Continue FY 05 efforts with 25 Science Advisors.

## **FY 2007 Plans:**

Continue FY 06 efforts with 22 Science Advisors.

## **C. OTHER PROGRAM FUNDING SUMMARY:**

### NAVY RELATED RDT&E:

- PE 0601152N In-House Laboratory Independent Research
- PE 0601153N Defense Research Sciences
- PE 0602114N Power Projection Applied Research
- PE 0602123N Force Protection Applied Research
- PE 0602131M Marine Corps Landing Force Technology
- PE 0602235N Common Picture Applied Research
- PE 0602236N Warfighter Sustainment Applied Research
- PE 0602271N RF Systems Applied Research
- PE 0602435N Ocean Warfighting Environment Applied Research
- PE 0602747N Undersea Warfare Applied Research
- PE 0602782N Mine and Expeditionary Warfare Applied Research
- PE 0603114N Power Projection Advanced Technology
- PE 0603123N Force Protection Advanced Technology
- PE 0603235N Common Picture Advanced Technology
- PE 0603236N Warfighter Sustainment Advanced Technology
- PE 0603271N RF Systems Advanced Technology
- PE 0603640M USMC Advanced Technology Demonstration (ATD)
- PE 0603727N Joint Experimentation
- PE 0603729N Warfighter Protection Advanced Technology

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PE 0603747N Undersea Warfare Advanced Technology

PE 0603758N Navy Warfighting Experiments and Demonstrations

PE 0603782N Mine and Expeditionary Warfare Advanced Technology

**D. ACQUISITION STRATEGY:** Not applicable.

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PROJECT NUMBER: Various

PROGRAM ELEMENT TITLE: NAVAL SCIENCE ADVISOR PROGRAM

PROJECT TITLE: Congressional Plus-Ups

## CONGRESSIONAL PLUS-UPS:

R9111	FY 2004	FY 2005
LASH MCM/ISR	6,734	3,368

### FY 04 Accomplishments:

Augmented the development of a hyperspectral based, airborne sensor for near shore minefield classification.

- Incorporated improved Navigation/Stablilization system capabilities into the Pod/Sensor system.
- Continued automatic detection algorithm development supported by flight data.
- Participated in Exercise Millennium Challenge with the Navy's Very Shallow Water (VSW) Detachment to detect mines in the VSW and Surf Zone.
- Continued to be guided by metrics determined in concert with OPNAV, Navy acquisition, and Marine Corps Systems Command.
- Tested the new airborne sensor's effectiveness in detecting mines in the surf zone.

### FY 05 Plans:

- Continue automatic detection algorithm development supported by flight data.
- Continue to be guided by metrics determined in concert with OPNAV, Navy acquisition, and Marine Corps Systems Command.