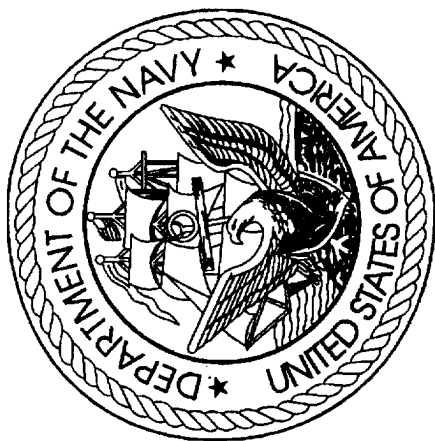


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DEPARTMENT OF THE NAVY
FISCAL YEAR (FY) 2001
BUDGET ESTIMATES



JUSTIFICATION OF ESTIMATES
FEBRUARY 2000

RESEARCH, DEVELOPMENT, TEST &
EVALUATION, NAVY
BUDGET ACTIVITY 6

DISTRIBUTION STATEMENT A
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UNCLASSIFIED

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROGRAM ELEMENT TITLE: Threat Simulator Development

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Budget	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
E0602 Electronic Warfare Environment Simulation (ECHO)	13,329	16,087	13,557	17,980	18,208	16,465	17,422	Cont.	Cont.
E0672 Effectiveness of Navy Electronic Warfare Systems (ENEWS)	9,804	0	0	0	0	0	0	Cont.	Cont.
R0672 Effectiveness of Navy Electronic Warfare Systems (ENEWS)	0	13,394*	10,736	13,458	13,805	14,011	14,646	Cont.	Cont.
TOTAL	23,133	29,481	24,293	31,438	32,013	30,476	32,068	Cont.	Cont.

Quantity of RDT&E Articles: N/A

*All funds transferred to project R0672.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This is a continuing program that consolidates the design, fabrication and integration of Naval Electronic Warfare (EW) threat simulators for increased managerial emphasis and coordination. These simulator development efforts provide realistic Developmental and Operational Test and Evaluation (DT&E/OT&E) environments to test Tri-Services EW systems and defensive tactics. These projects develop former Soviet and Free-World Anti-Air and Anti-Ship weapon systems simulators in accordance with the Services requirements.

(U) The E0602 Project, EW Environment Simulation (ECHO) provides airborne system component level Test and Evaluation (T&E) at the Electronic Combat Simulation and Evaluation Laboratory (ECSEL), Naval Air Warfare Center Weapons Division (NAWCWD), Point Mugu, CA. ECHO also provides a secure anechoic closed loop T&E facility for fully integrated, aircraft-installed systems testing at the EW Integrated Systems Test Laboratory (EWISL) at the Naval Air Warfare Center Aircraft Division (NAWCAD), Patuxent River, MD. Included in this Project is the T&E of airborne systems and tactics in flight, against the open air range at the Electronic Combat Range (ECR) complex located at the NAWCWD, China Lake, CA.

(U) The R0672 Project (formally E0672), Effectiveness of Navy EW Systems (ENEWS), is a Department of the Navy (DON) unique project that supports Test and Evaluation of Ships EW efforts. ENEWS provides T&E for surface and subsurface shipboard systems and tactics in digitally modeled battle scenarios at the component, fully integrated single ship, multi-ship and full-up multi-platform battle group levels. ENEWS also provides a secure anechoic closed loop T&E facility specifically designed to test shipboard systems at the stand alone subsystem or fully integrated systems level. The last and largest portion of this project addresses the flyable infrared and Radio Frequency simulators flown on specially configured NP-3D aircraft to provide at-sea open air T&E for systems and tactics. All ENEWS assets are developed, operated and maintained by the Naval Research Laboratory (NRL), Washington, DC.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research, and development use.

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Exhibit R-2, RDT&E Budget Item Justification
(Exhibit R-2, Page 1 of 16)

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: E0602**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ECHO**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
E0602 Electronic Warfare Environment Simulation (ECHO)	13,329	16,087	13,557	17,980	18,208	16,465	17,422	Cont.	Cont.
TOTAL	13,329	16,087	13,557	17,980	18,208	16,465	17,422	Cont.	Cont.

Quantity of RDT&E Articles: N/A

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The objective of this project is development of necessary simulation facilities and approaches to allow determination of the effectiveness of EW in real world engagement situations and to support the introduction of modern, effective systems into Naval Aviation. The heavy use of test resources by all Services demonstrates the importance of these assets. The Navy has been very successful in executing all of its major programs, and to date has had no major technical problems.

(U) The EW Environment Simulation (ECHO) project is unique in that it is the only program within the Department of Defense (DOD) which develops and provides Naval anti-air warfare threat assets for Testing and Evaluation (T&E) and is a critical part of the Office of the Secretary of Defense (OSD) Test Resource Master Plan. The OSD Master Plan employs many ECHO project resources for planning, analysis, testing and verification of airborne EW equipment.

(U) This project directly supports the T&E requirements of the following programs: High Speed Anti-Radiation Missile, ALR-67(V)2,3,4, ALQ-126B, AN/ALQ-156, EW Advanced Technology (EWAT), Integrated Defensive Electronic Countermeasures (IDECM) (including the Radio Frequency Countermeasures (RFCM), Common Missile Warning System (CMWS), and Advanced Strategic Tactical Expendables (ASTE) subsystem T&E milestones), AVR-2, AAR-47, ALE-50, as well as other Tri-Service EW systems with initial operational capability dates in the 1990's and early 2000's.

(U) This project provides for the development of an Integrated Air Defense T&E capability to be fielded at each of the three sites comprising the Navy's Tri-Center complex: NAWCWD, China Lake and Point Mugu in CA, and NAWCAD, Patuxent River, MD.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT:** 0604256N **PROJECT NUMBER:** E0602
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE:** ECHO

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$625) Completed Ultra Violet (UV) Stimulator.
- (U) (\$3,103) Completed I-23 Advanced Capability.
- (U) (\$1,774) Initiated/Completed J-Band Advanced Threat Simulator (JBATS) Enhanced Capabilities.
- (U) (\$300) Initiated replacement of Fire and Forget Missile System.
- (U) (\$1,993) Continued I-23 additional seeker integration.
- (U) (\$1,003) Initiated Advanced Multiple-Emitter Simulator Direction Finding Modification.
- (U) (\$739) Continued Blue Army Threat Seeker for Missile on Mountain (MOM).
- (U) (\$90) Continued Validation and Updates -- Simulator Validation (SIMEVAL).
- (U) (\$263) Continued Validation and Updates - Radar Updates.
- (U) (\$80) Continued Validation and Updates - Missile/Gun Updates.
- (U) (\$459) Continued Validation and Updates - Validation.
- (U) (\$1,025) Continued ECHO technical and engineering support.
- (U) (\$998) Continued ECHO Systems Engineering activity.
- (U) (\$877) Continued ECHO Test Requirements activity.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: E0602**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ECHO**

2. FY 2000 PLAN:
- (U) (\$466) Complete replacement of Fire and Forget Missile System.
 - (U) (\$750) Complete I-23 additional seeker integration.
 - (U) (\$2,065) Continue Advanced Multiple-Emitter Simulator Direction Finding Modification.
 - (U) (\$1,546) Continue Blue Army Threat Seeker for Missile on Mountain (MOM).
 - (U) (\$500) Continue SUTLER HITCH
 - (U) (\$1,675) Initiate RADAR Signal Density Environment (RSDE) Mobile.
 - (U) (\$3,572) Initiate Hybrid Laboratory Simulator (HLS) MOBCAP Upgrades.
 - (U) (\$593) Initiate IR/UV/RF Sensor/Facilities Integration.
 - (U) (\$1,000) Initiate/Complete Infrared Seeker Evaluation Van/Airborne Turret Infrared Measurement System (IRSEV/ATIMS).
 - (U) (\$100) Continue Validation and Updates - Radar and Weapon Simulator Updates.
 - (U) (\$485) Continue Validation and Updates - Missile/Gun Updates.
 - (U) (\$63) Continued Validation and Updates - Validation.
 - (U) (\$575) Continue Validation and Updates - Validation.
 - (U) (\$1,063) Continue ECHO technical and engineering support.
 - (U) (\$571) Continue ECHO System Engineering activity.
 - (U) (\$1,063) Continue ECHO Test Requirements activity.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604256N PROJECT NUMBER: E0602
PROGRAM ELEMENT TITLE: Threat Simulator Development PROJECT TITLE: ECHO

3. FY 2001 PLAN:

- (U) (\$1,500) Complete Advanced Multiple-Emitter Simulator Direction Finding Modification.
- (U) (\$750) Complete Blue Army Threat Seeker for Missile on Mountain (MOM).
- (U) (\$750) Complete SUTLER HITCH.
- (U) (\$2,000) Complete RADAR Signal Density Environment (RSDE) Mobile.
- (U) (\$1,712) Complete HLS MOBCAP Upgrades.
- (U) (\$326) Complete IR/UV/RF Sensor/Facilities Integration.
- (U) (\$1,646) Initiate SA-XX Seeker Integration.
- (U) (\$1,773) Initiate IR Target Array.
- (U) (\$100) Continue Validation and Updates - SIMEVAL.
- (U) (\$75) Continue Validation and Updates - Radar and Weapon Simulator Updates.
- (U) (\$75) Continue Validation and Updates - Missile/Gun Updates.
- (U) (\$400) Continue Validation and Updates - Validation.
- (U) (\$1,200) Continue ECHO technical and engineering support.
- (U) (\$150) Continue ECHO System Engineering activity.
- (U) (\$1,100) Continue ECHO Test Requirements activity.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

PROJECT NUMBER: E0602
PROJECT TITLE: ECHO

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604256N
PROGRAM ELEMENT TITLE: Threat Simulator Development

(U) B. PROGRAM CHANGE SUMMARY

	FY 1999	FY 2000	FY 2001
(U) FY 2000 President's Budget:	14,358	16,176	13,687
(U) Appropriated Value	14,403	16,176	
(U) Adjustments from PRESBUDG:	-1,029	-89	-130
(U) FY 2001 President's Budget Submit:	13,329	16,087	13,557

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1999 net decrease of \$1,029 thousand reflects a reduction of \$300 thousand for a Small Business Innovative Research assessment, a decrease of \$626 thousand for a reprioritization of requirements within the Navy, a reduction of \$67 thousand for inflation savings, and a reduction of \$36 thousand for the payment of lapsed liability contracts. The FY 2000 decrease reflects a \$89 thousand reduction for an across-the-board Congressional rescission. The FY 2001 net decrease of \$130 thousand reflects a decrease of \$29 thousand for Strategic Sourcing Plan savings and Navy Working Capital Fund (NWCFF) adjustments, an increase of \$18 thousand for military and civilian pay, a decrease of \$83 thousand for revised economic assumptions, and a decrease of \$36 thousand for reprioritization of requirements within the Navy.

(U) Schedule: Due to the adjustments in FY 1999, the Advanced Multiple-Emitter Simulator Direction Finding Modification project completion was delayed until FY2001.

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E: Not applicable

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: E0602**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ECHO**

(U) C. ACQUISITION STRATEGY: The Electronic Warfare Threat Simulator Development program is a Non-ACAT Program which operates in accordance with the OPNAV approved Electronic Warfare Test and Evaluation Resource Investment Strategy (with no specific acquisition strategies). The Electronic Warfare Environment Simulation Project, under the Threat Simulator Development Program, is unique in that it is the only program within the Department of Defense dedicated solely to developing and providing Naval threat assets for test and evaluation and is a critical part of the Under Secretary of Defense for Acquisition (USD(A)) annual Electronic Warfare Plan. This plan employs many of the Electronic Warfare Simulation Development project resources for the planning, analysis, testing, and verification of airborne EW equipment. To preclude unwarranted intra-Service and inter-Service duplication, T&E resource requirements are coordinated through the OSD CROSSBOW Committee and the Navy Tri-Center complex for mutual support, cost reduction, and increased test effectiveness. The Navy's Electronic Warfare Test and Evaluation Resource Investment Strategy emphasizes a coordinated analysis and prioritization of Navy EW T&E requirements and implementation of disciplined design-to-cost techniques

(U) D. SCHEDULE PROFILE: Not applicable

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER: E0602
PROJECT TITLE: ECHO

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
				<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Date</u>	<u>Cost</u>	<u>Date</u>			
JBATS IH (HDW/SW Dev, Sys Integ)	PD	EWA/NSMA, China Lake, CA	2,558	559	Oct-98						3,117	3,117
ICAP III, TADIRCM, JETS (Rqrmts)	PD	EWA/NSMA, China Lake, CA		600	Mar-99	1,000	Mar-00	1,000	Mar-01		2,600	2,600
I-23 (HDW/SW Dev, Sys Integ)	RX	CTA, China Lake, CA	2,143	2,305	Nov-98						4,448	4,448
HLS MOB CAP UPGRADES (HDW/SW Dev, Sys Integ)	PD	EWA/NSMA, China Lake, CA				2,000	Oct-99	1,000	Oct-00		3,000	3,000
RSDE MOB (HDW/SW Dev, Sys Integ)	RX	RPI, China Lake, CA				1,500	Oct-99	1,600	Oct-00		3,100	3,100
2 nd IR TARGET ARRAY	RX	TBD, China Lake, CA						800	Oct-00	1,200	2,000	2,000
Award Fee												
IR TGT (HDW/SW Dev, Sys Integ)	RX	EWA/CA				75	Dec-99	60	Mar-01		135	135
HDW/SW Dev, Systems Engineering	WX	NAWC-WD, China Lake, CA	36,604	6,451	Dec-98	7,442	Dec-99	4,883	Dec-00	3,200	4,700	4,700
Miscellaneous	Various		13,440	3,403	Dec-98	4,055	Feb-00	2,699	Feb-01	CONT	CONT	CONT
Subtotal Product Development			54,745	13,318		16,072		13,542		CONT	CONT	CONT

Not Applicable
Subtotal Support

Remarks

Not Applicable

Subtotal Test & Evaluation

Remarks:

0	0	0	0	0	0	0	0	0	0	0	0
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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER: E0602
PROJECT TITLE: ECHO

<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>FY 2001 Cost</u>	<u>FY 2001 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Travel	WX NADEP, Jax, FL	43	11	Oct-98	15	Oct-99	15	Oct-00	CONT	CONT	
Subtotal Management		43	11		15		15		CONT	CONT	
Total Cost		\$54,788	\$13,329		\$16,087		13,557		CONT	CONT	

Remarks

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, Page 9 of 16)

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: R0672**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ENEWS**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
R0672 Effectiveness of Navy Electronic Warfare Systems (ENEWS)	9,804	13,394	10,736	13,458	13,805	14,011	14,646	Cont.	Cont.
TOTAL	9,804	13,394	10,736	13,458	13,805	14,011	14,646	Cont.	Cont.

* In FY 99 funding executed under E0672
Quantity of RDT&E Articles: N/A

A.(U) **MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** The objective of the Effectiveness of Navy EW Systems (ENEWS) project is the development and application of necessary simulation assets to determine the effectiveness of EW for navy ships in real-world engagement situations and primarily supports the introduction of modern, effective shipboard and offboard EW systems, and tactics for the surface Navy. The heavy use of ENEWS resources by NAVSEA, OPTEVFOR and other EW RDT&E agencies speaks to the overall importance of these assets. The project provides support for EW system Design Engineering Test (ET), Development Test (DT), Operational Test (OT), and the development of tactics. Its quick reaction capabilities have had great impact on crisis situations such as the Lebanon and Libyan crises, the Iran Harpoon threat, the Persian Gulf crisis, and Operation Desert Shield/Storm.

(U) The primary threat to surface ships is Anti-Ship Capable Missile (ASCM) systems. The ENEWS project is unique in that it is the only project within the Department of Defense (DOD) dedicated to developing and providing realistic assets to test and evaluate the effectiveness of shipboard EW systems and tactics against these type threats.

(U) The ENEWS project is a critical part of the OSD Test Resource Master Plan. This plan employs many of the ENEWS assets for planning, analysis, testing and verification of shipboard and offboard EW systems, techniques and tactics. As part of its normal activities, ENEWS provides DT&E, OT&E and FOT&E support to the surface navy for all ship classes. Future DT, OT, and FOT support will include the SLQ-32 updates as required, R17 OX (NULKA, Giant IR Decoys), the phase-in of AIEWS in FY-00, Rapid Anti-ship Integrated Defense System (RAIDS), all MK245 GIANT tests, Advanced IR Decoys, Decoy placement (Littoral), Ship IR Signature, and RCS measurement of DDG-51, LPD-17 and DD-21 class ships, Multiband Anti-ship Cruise Missile Defense Tactical EW System (MATES), High Power Microwave (HPM) Program, and other Ship Self-Defense initiatives, including RDT&E 6.3A Advanced Technology Demonstrations and 6.2 EW Technology Base programs. In addition, ENEWS assets are regularly employed to test the effectiveness of NATO ships EW systems.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: R0672**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ENEWS**

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$626) Continued Computer Simulation (COMSIM) System Readiness.
- (U) (\$336) Continued COMSIM Scenario Implementation, Environment Generator & System Engineering
- (U) (\$28) Continued COMSIM Validation Process Development (M&S)
- (U) (\$190) Continued COMSIM Instrumentation, Data Analysis and ASM Distributed Simulation Capability (Complete Display Enhancements)
- (U) (\$152) Continued COMSIM Threat Database Repository Updates
- (U) (\$293) Initiated COMSIM Anti Ship Missile Updates (4 Classified Systems)
- (U) (\$266) Initiated COMSIM Development of Anti Ship Missile Engagement Simulation
- (U) (\$2,734) Continued Radio Frequency Simulation (RFSIM) Simulator Readiness.
- (U) (\$1,111) Continued RFSIM Multi-Threat Processor Upgrade. (J-Band)
- (U) (\$213) Continued RFSIM OEM Simulator Upgrade. (Complete ROMEO)
- (U) (\$296) Completed RFSIM 2 Validation Reports
- (U) (\$254) Continued RFSIM CTS Target Fidelity Development (Study and Spec).
- (U) (\$91) Completed RFSIM Ground Truth Reference System.
- (U) (\$103) Continued RFSIM Analytical and Reporting Software (Complete Alpha tools).
- (U) (\$96) Initiated RFSIM Dual RF/ARM Seeker Simulator Development
- (U) (1,163) Continued Infrared Simulation (IRSIM) Readiness
- (U) (\$311) Initiated IRSIM FOXTROT Simulator Upgrades (SIM 1 & B1).
- (U) (\$251) Continued IRSIM VICTOR Simulator Upgrades (SIM B and SIM 3a) and System Eng.
- (U) (\$49) Completed IRSIM 1 Validation Report. (BANNER)
- (U) (\$53) Continued IRSIM MEIR II System Development. (01)
- (U) (\$195) Initiated IRSIM FOXTROT I and FOXTROT II Simulator Development.
- (U) (\$128) Continued IRSIM VICTOR I and VICTOR II Simulator Development.
- (U) (\$35) Continued IRSIM Lab/Field Systems
- (U) (\$830) Continued ENEWS Plans & Programs.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: R0672**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ENEWS**

2. FY 2000 PLAN:

- (U) (\$635) Continue COMSIS System Readiness.
- (U) (\$425) Continue COMSIS Scenario Implementation, Environment Generator & System Engineering
- (U) (\$175) Complete COMSIS 1 Validation Report
- (U) (\$165) Continue COMSIS Instrumentation, Data Analysis and ASM Distributed Simulation Capability Improvements
- (U) (\$220) Continue COMSIS Threat Database Repository Updates
- (U) (\$442) Continue COMSIS Anti Ship Missile Updates (4 Classified Systems-Complete KAPOK)
- (U) (\$493) Continue COMSIS Development of Anti Ship Missile Engagement Simulation (Complete INDIA)
- (U) (\$3,072) Continue RFSIM Simulator Readiness.
- (U) (\$1,300) Continue RFSIM Multi-Threat Processor Upgrade. (Complete J-Band)
- (U) (\$250) Continue RFSIM OEM Simulator Upgrades. (Complete OSCAR)
- (U) (\$300) Complete RFSIM 2 Validation Reports
- (U) (\$381) Complete RFSIM Dual RF/ARM Seeker Simulator.
- (U) (\$375) Initiate RFSIM CTS 3 Axis Flight Simulator.
- (U) (\$100) Continue RFSIM Analytical and Reporting Software (Complete India Tools).
- (U) (\$633) Continue RFSIM CTS Target Fidelity Development (Calibrated FA).
- (U) (1,078) Continue IRSIM Readiness
- (U) (\$229) Continue IRSIM FOXTROT Simulator Upgrades (SIM 1 and B1).
- (U) (\$191) Continue IRSIM VICTOR Simulator Upgrade (SIM B and SIM3a) and System Eng.
- (U) (\$150) Initiate IRSIM VICTOR Simulator Upgrade (SIM 4)
- (U) (\$54) Complete IRSIM 1 Validation Report.
- (U) (\$120) Continue IRSIM MEIR II System Development. (01) Flight Capability (04)
- (U) (\$162) Continue IRSIM FOXTROT I and FOXTROT II Simulator Development.
- (U) (\$525) Continue IRSIM VICTOR I and VICTOR II Simulator Development.
- (U) (\$185) Initiate IRSIM Littoral Warfare Sim 1 Hardware Development.
- (U) (\$145) Continue IRSIM Lab/Field Systems
- (U) (\$1,589) Continue ENEWS Plans & Programs.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

PROJECT NUMBER: R0672
PROJECT TITLE: ENEWS

PROGRAM ELEMENT: 0604256N
PROGRAM ELEMENT TITLE: Threat Simulator Development

BUDGET ACTIVITY: 6

3. FY 2001 PLAN:

- (U) (\$660) Continue COMSISIM System Readiness.
- (U) (\$240) Continue COMSISIM Scenario Implementation, Environment Generator & System Engineering (Complete RADAR/Tactics Model Transitions)
- (U) (\$100) Continue COMSISIM Validation (1 Report)
- (U) (\$100) Continue COMSISIM Instrumentation, Data Analysis and ASM Distributed Simulation Capability (Complete Target Display)
- (U) (\$170) Continue COMSISIM Threat Database Repository Updates
- (U) (\$250) Continue COMSISIM Anti Ship Missile Updates (3 Classified Systems)
- (U) (\$485) Continue COMSISIM Development of Anti Ship Missile Engagement Simulation
- (U) (\$2,283) Continue RFSISIM Simulator Readiness.
- (U) (\$1,200) Continue RFSISIM Multi-Threat Processor Upgrade. (I-Band)
- (U) (\$150) Continue RFSISIM OEM Simulator Upgrades. (Complete TANGO)
- (U) (\$275) Continue RFSISIM Validation (Complete 2 Validation Reports)
- (U) (\$175) Continue RFSISIM CTS 3 Axis Flight Simulator.
- (U) (\$90) Continue RFSISIM Analytical and Reporting Software (Complete November Tools).
- (U) (\$620) Continue RFSISIM CTS Target Fidelity Development (Complete Intra-Pulse Mod).
- (U) (\$1,161) Continue IRSISIM Readiness
- (U) (\$100) Continue IRSISIM FOXTROT Simulator Upgrade (SIM 1 and Complete B1).
- (U) (\$92) Complete IRSISIM VICTOR Simulator Upgrades (SIM B and SIM3a) and System Eng.
- (U) (\$60) Continue IRSISIM VICTOR Simulator Upgrade (SIM 4)
- (U) (\$55) Continue IRSISIM Validation (Complete 1 Validation Report).
- (U) (\$80) Continue IRSISIM MEIR II System Development. (01) Flight Capability
- (U) (\$148) Continue IRSISIM FOXTROT I and FOXTROT II Simulator Development.
- (U) (\$415) Continue IRSISIM VICTOR I and VICTOR II Simulator Development.
- (U) (\$181) Continue IRSISIM Littoral Warfare Sim 1 Hardware Development.
- (U) (\$1,646) Continue ENEWS Plans & Programs.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: R0672**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ENEWS**

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	9,951	13,468	11,120
(U) Appropriated Value	9,997	13,468	
(U) Adjustments from PRESBUDG:	-147	-74	-384
(U) FY 2001 OSD/OMB Budget Submit:	9,804	13,394	10,736

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1999 adjustments reflects a decrease for a Small Business Innovative Research assessment of \$58 thousand and a decrease for Below Threshold Reprogramming of \$19 thousand and a decrease for various rate adjustments of \$70 thousand. The FY00 decrease reflects Across the Board reduction of \$74 thousand. The FY01 net decrease of \$384 thousand is due to a decrease for Navy Working Capital Fund (NWCFF) adjustments of \$318 thousand and a decrease for various rate adjustments of \$66 thousand.

(U) Schedule: Not applicable.

(U) Technical: Not applicable

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604256N** **PROJECT NUMBER: R0672**
PROGRAM ELEMENT TITLE: Threat Simulator Development **PROJECT TITLE: ENEWS**

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E: Not applicable

(U) D. ACQUISITION STRATEGY: The Electronic Warfare Threat Simulator Development program is a Non-ACAT Program which operates in accordance with the OPNAV approved Electronic Warfare Test and Evaluation Resource Investment Strategy (with no specific acquisition strategies). The Effectiveness of Navy Electronic Warfare Systems Project, under the Threat Simulator Development Program, is unique in that it is the only program within the Department of Defense dedicated solely to developing and providing Anti-Ship Capable Missile threat assets for test and evaluation and is a critical part of the Under Secretary of Defense for Acquisition (USD(A)) annual Electronic Warfare Plan. This plan employs many of the Electronic Warfare Simulation Development project resources for the planning, analysis, testing, and verification of surface EW equipment. The Navy's Electronic Warfare Test and Evaluation Resource Investment Strategy emphasizes a coordinated analysis and prioritization of Navy EW T&E requirements and implementation of disciplined design-to-cost techniques.

(U) E. SCHEDULE PROFILE: Not applicable

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, Page 15 of 16)

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DATE: September 1999

EXHIBIT R-3, FY 2001 RDT&E, N COST ANALYSIS

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604256N

PROJECT NUMBER: R0672
PROJECT TITLE: ENEWS

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
HDW/SW Dev, Sys Eng/Integ	WX NRL, Wash DC	137,543	9,793	Oct98	13,394	Oct-99	10,736	Oct-00	CONT	CONT	CONT
Subtotal Project Development											
		137,543	9,793		13,394		10,736		CONT	CONT	CONT
Remarks											
Not Applicable											
Subtotal Support											
		0	0		0		0		0	0	0
Remarks											
Not Applicable											
Subtotal Test & Evaluation											
		0	0		0		0		0	0	0
Remarks											
Travel	WX NADEP Jax, FL	43	11	Oct 98	0		0		0	0	0
Subtotal Management											
		43	11		0		0				
Remarks											
Total Cost											
		137,586	9,804		13,394		10,736				

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EXHIBIT R-2, FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604258N**
PROGRAM ELEMENT TITLE: Target Systems Development

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
A0609 Aerial Target Systems Development	19,354	32,697	30,118	34,801	31,590	16,721	16,797	Cont.	Cont.
A0610 Weapon Systems T&E Development/Procurement	16,823	21,169	9,893	15,239	15,401	30,396	32,236	Cont.	Cont.
Quantity of RDT&E Articles	6	8	3	3	3	3	3		
20612 Surface Targets Development	941	1,094	1,127	1,165	1,169	1,166	1,232	Cont.	Cont.
Quantity of RDT&E Articles	1	1	1	1	1	1	1		
TOTAL	37,118	54,960	41,138	51,205	48,160	48,283	50,265	Cont.	Cont.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element funds the development and procurement of aerial and surface targets and associated Target Augmentation and Auxiliary Systems (TA/AS) necessary to duplicate or simulate threat characteristics in support of weapons systems test and evaluation and fleet training. Included within this program element are development of: Subsonic Subscale Aerial Target (SSAT), various TA/AS, the Aerial Target Launch Ship (ATLS) for VANDAL, Theater Ballistic Missile Target (TBMT), Target Threat Characterization (TTC), Supersonic Sea Skimming Target (SSST), Navy Full Scale Aerial Target (FSAT) for conversions, the FSAT Follow-On (FO), surface targets for test and evaluation, surface towed targets, improved target control system, and an anti-radiation missile target. This program element also includes Vandal (EER) testing and procurement of TA/AS Vector Scoring.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E Management Support because it supports the operations and installations required for general research and development use.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604258N** **PROJECT NUMBER: A0609**
PROGRAM ELEMENT TITLE: Target Systems Development **PROJECT TITLE: Aerial Targets Systems Development**

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
A0609 Aerial Targets Systems Development	19,354	32,697	30,118	34,801	31,590	16,721	16,797	Cont.	Cont.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Aerial Target Systems and associated target augmentation and auxiliary systems are developed in response to the need to test and provide training for Joint strike and littoral warfare systems required to defend fleet surface and air units in a hostile environment. The threat envelope covered extends from the surface to 100K feet for speeds in the low subsonic range to MACH 4.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$ 5,311) Conducted Concept Studies on SSAT
 - (U) (\$ 1,161) Continued TTC.
 - (U) (\$ 2,907) Continued TAVAS development for aerial targets.
 - (U) (\$ 1,714) Continued ATLS.
 - (U) (\$ 3,435) Continued SSST development and initiated development of follow-on SSST
 - (U) (\$ 2,596) Completed development of the TBMT as a target variant.
 - (U) (\$ 2,230) Continued target support.

2. (U) FY 2000 PLAN:
 - (U) (\$15,767) Initiate SSAT development.
 - (U) (\$ 870) Continue TTC.
 - (U) (\$ 1,503) Continue TAVAS development.
 - (U) (\$ 12,098) Continue SSST development.
 - (U) (\$ 2,459) Continue target support.

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BUDGET ACTIVITY: 6 **R-2a, FY 2001 EXHIBIT RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET**
PROGRAM ELEMENT: 0604258N **PROJECT NUMBER: A0609**
PROGRAM ELEMENT TITLE: Target Systems Development **PROJECT TITLE: Aerial Targets Systems Development**

3. (U) FY 2001 PLAN:
- (U) (\$23,873) Continue SSAT development.
 - (U) (\$ 1,488) Continue TTC.
 - (U) (\$ 1,891) Continue TA/AS development.
 - (U) (\$ 2,866) Continue target support.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>		<u>FY 2000</u>	<u>FY2001</u>
(U) FY 2000 President's Budget:	35,828		29,628	43,772
(U) Appropriated Value:	36,707		29,628	
(U) Adjustments from President's Budget:	-16,474		3,069	-13,654
(U) FY2001 President's Budget Submit:			19,354	32,697
				30,118

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 net decrease of \$ 16,474 thousand reflects a \$5,008 thousand decrease for a SBIR assessment and a \$11,300 thousand decrease for a reprioritization of requirements within the Navy, and a \$166 thousand decrease for Inflation Savings. FY 2000 net increase of \$3,069 thousand reflects a DON reprogramming of a \$3,250 thousand increase to the SSST program and offset by a \$181 thousand decrease for an Across-the-Board Congressional reduction. FY 2001 net decrease of \$13,654 thousand reflects a decrease of \$447 thousand for Strategic Sourcing Plan Savings and Navy Working Capital Fund adjustments, a \$8,600 thousand decrease for the SSST, a \$4,300 thousand decrease for Terrier Targets, a \$244 thousand decrease for revised economic assumptions, and a \$79 thousand decrease for reprioritization of requirements within the Navy, and is offset by a \$16 thousand increase for Military and Civilian Pay.

- (U) Schedule: Not applicable
- (U) Technical: Not applicable

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604258N** **PROJECT NUMBER: A0609**
PROGRAM ELEMENT TITLE: Target Systems Development **PROJECT TITLE: Aerial Targets Systems Development**

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To
WPN #228000	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>
	68,936	45,970	58,891	62,157	59,390	79,364	80,970	Cont.

Related RDT&E

- (U) P.E. 0204136N (F/A-18 Squadrons)
- (U) P.E. 0205667N (F-14 Upgrade)
- (U) P.E. 0207161N (Tactical Air Intercept)
- (U) P.E. 0207163N (Advanced Medium Range Air-to-Air Missile)
- (U) P.E. 0604366N (TBMT Improvement)
- (U) P.E. 0604372N (New Threat Upgrade)
- (U) P.E. 0604755N (Ship Self Defense)

(U) D. ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.

(U) E. SCHEDULE PROFILE: Not applicable

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROJECT NUMBER: A0609

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Aerial Targets		Systems		Development		Target Value of Contract
							FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Cost to Complete	Total Cost		
SSAT 1)	Lockheed Martin Skunk Works Palmdale, CA/ Northrup Grumman Hawthorne, CA	NA	3,600	3/99	14,000	12/99	22,000	11/00	37,500	77,100	77,100	77,100	
ATLS	CPFF Allied Signal Mishawaka, IN	4,236	1,322	6/99					0	5,558	5,558	5,558	
SSST (Precision Guidance)	CPFF McDonnell Douglas, St Louis, MO Competitive	0	2,106	8/99	6,898	7/00			28,102	35,000	35,000	35,000	
SSST 2)	CPIF Raytheon Tucson, AZ	10,588	1,744	6/99					0	12,332	12,332	12,332	
SSST/TBMT	CPAF same as above	792	66	2/00					0	858	858	858	
Miscellaneous contracts	Various	5,721	2,803	Various	5,754	Various	1,396	NA	Cont.	Cont.	Cont.	Various	
Miscellaneous (NAWC)	WX/RXs	39,463	4,230	Various	1,988	Various	2,988	NA	Cont.	Cont.	Cont.	Various	
Subtotal Project Development			60,800	15,871	28,640	Various	26,384	Cont.	Cont.	Cont.	Cont.	Various	

Remarks:

- 1) Details at a higher classification. Contact Mr. Pic, N89B, at (703) 697-4840 for further details.
- 2) The decision was made to go to competitive contract on the SSST in FY99 ; contract award expected FY00.
- 3) FY99 & Prior year award fee earned is 91 %

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**Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 5 of 12)**

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

BUDGET ACTIVITY: 6	PROGRAM ELEMENT:	0604258N	PROJECT NUMBER:	A0609	DATE:	February 2000		
Cost Categories:	Performing Activity & Location	FY 1999 Award Date	FY 2000 Award Date	FY 2001 Award Date	Aerial	Targets	Systems	Development
	Contract Method & Type	Total Prior Yrs Cost	FY 1999 Cost	FY 2000 Cost	FY 2001 Cost	Cost to Complete	Total Cost	Target Value of Contract
Miscellaneous (HQ/NAWC)	Various	304	336	286	263	Cont.	Cont.	
Subtotal Support		304	336	286	263	Cont.	Cont.	
Miscellaneous (NAWC)	Various	2040	1937	2,336	2,150	Cont.	Cont.	
Subtotal Test & Evaluation		2040	1937	2,336	2,150	Cont.	Cont.	
Remarks								
Miscellaneous (HQ/NAWC/NADEPs)	Various	8,735	1210	1,435	1,321	Cont.	Cont.	
Subtotal Management		8,735	1210	1,435	1,321	Cont.	Cont.	
Remarks								
Total Cost		71,879	19,354	32,697	30,118	Cont.	Cont.	

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT:** 0604258N **PROJECT NUMBER:** A0610
PROGRAM ELEMENT TITLE: Target Systems Development **PROJECT TITLE:** Weapon System T&E Development /Procurement

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 Budget	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	To Complete	Total Program
A0610 Weapon Systems T & E Development/Procurement	16,823	21,169	9,893	15,239	15,401	30,396	32,236	3	Cont.
TOTAL									
Quantity of RDT&E Articles	6	8	3	3	3	3	3	3	Cont.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for the development and procurement of aerial targets used solely for test and evaluation of Naval Weapons Systems which closely replicate current and projected threats to fleet units in the Joint Strike and the Littoral Warfare environments. This replication must include characteristics related to size, performance envelope, and electromagnetic and infrared signatures. As threats change, changes must be made to keep the targets as threat representative as possible. This is done in response to changes in the requirements of the developers of naval weapons systems.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$ 14,852)Continued programming, engineering and logistic support for the FSAT, including Aviation Depot Level Repairables (AVDLR), procurement of kit material and conversion of six F-4S aircraft into FSAT targets.
 - (U) (\$ 1,212)Continued T & E TA/AS Vector Scoring development/procurement/support.
 - (U) (\$ 560) Continued VANDAL support.
 - (U) (\$ 199) Continued Target Support

2. (U) FY 2000 PLAN:
 - (U) (\$ 20,155) Program, engineering and logistic support for the FSAT, including Aviation Depot Level Repairables (AVDLR), procurement of kit material and conversion of eight F-4S aircraft into FSAT targets.
 - (U) (\$ 486) Continue T & E TA/AS Vector Scoring development/procurement/support.
 - (U)(\$ 195) Continue VANDAL support
 - (U) (\$ 333) Continue Target Support

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604258N

PROGRAM ELEMENT TITLE: Target Systems Development

PROJECT NUMBER: A0610
PROJECT TITLE: Weapon System T&E

Development

/Procurement

3. (U) FY 2001 PLAN:

- (U) (\$ 8,223) Program, engineering and logistic support for the FSAT, including Aviation Depot Level Repairables (AVDLR), procurement of Kit material and conversion of three F-4S aircraft into FSAT targets.
- (U) (\$ 1,004) Continue T & E TA/AS Vector Scoring development/procurement/support.
- (U) (\$ 202) Continue VANDAL support
- (U) (\$ 464) Continue Target Support

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Exhibit R-2a, RDT&E Project Justification
(Exhibit R-2a, Page 8 of 12)

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EXHIBIT R-2a, FY 2001 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

PROJECT NUMBER: A0610
 PROJECT TITLE: Weapon System T & E

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604258N
 PROGRAM ELEMENT TITLE: Target Systems Development

Development

/Procurement

(U) B. PROGRAM CHANGE SUMMARY			
(U) FY 2000 President's Budget:	FY 1999	FY 2000	FY 2001
(U) Appropriated Value:	16,850	21,536	9,285
(U) Adjustments from President's Budget:	17,056	21,536	
(U) FY 2001 President's Budget Submit:	-27	-367	608
	16,823	21,169	9,893

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY1999 decrease of \$27 thousand reflects a \$77 thousand decrease for a SBIR assessment, a \$253 thousand decrease for reprioritization of requirements, a \$77 thousand decrease for Inflation Savings, offset by a \$380 thousand increase reprogramming from A0609. FY 2000 decrease of \$367 thousand reflects a \$250 thousand decrease for reprioritization of requirements within the Navy, and a \$117 thousand decrease for an Across the Board reduction. FY 2001 increase of \$608 thousand is due to a \$600 thousand increase for the Full Scale Aerial Target, a \$164 thousand increase for Navy Working Capital Fund(NWCF) rate adjustments, a \$26 thousand increase for Military and Civilian Pay, and is offset by a \$95 thousand decrease for Strategic Sourcing Plan Savings and final balancing, a \$61 thousand decrease for revised economic assumptions, and a \$26 thousand decrease for reprioritization of requirements within the Navy.

(U) Schedule: Not applicable

(U) Technical: Not applicable

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

Related RDT&E

- (U) P.E. 0204136N (F/A-18 Squadrons)
- (U) P.E. 0205667N (F-14 Upgrade)
- (U) P.E. 0207161N (Tactical Air Intercept)
- (U) P.E. 0207163N (Advanced Medium Range Air-to-Air Missile)
- (U) P.E. 0604366N (Standard Missile Improvement)
- (U) P.E. 0604372N (New Threat Upgrade)
- (U) P.E. 0604755N (Ship Self Defense)

D. (U) ACQUISITION STRATEGY: This is a non-ACAT program with no specific acquisition strategies.

E. (U) SCHEDULE PROFILE: Not applicable

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604258N PROJECT NUMBER: A0610 PROJECT TITLE: Weapon System T & E Development /Procurement

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date		
Vector Scorer Development	SS/FFP	Aeronautical Systems Center	0	679	3/99	400	7/00	850	7/01	9,189	9,189
TA/AS - ARMS Upgrade	SS/FFP	Eglin AFB, FL	910	150	4/99			0		1,060	1,060
Miscellaneous Contracts	Various	Cambridge Consultants, UK	20,829	304						Cont.	Cont.
Miscellaneous (NAWC/NADEP)	WX/RX	Various	53,368	14,671	Various	19,412	Various	8,450	Various	Cont.	-
Subtotal Product Development			75,107	15,804		19,812		9,300		Cont.	Cont.
Subtotal Test & Evaluation			0	0		0		0		0	0
Remarks:											
Miscellaneous (NAWC/NADEP)	WX/RX	Various	3,107	340	Various	453	Various	198	Cont.	Cont.	Cont.
Subtotal Management			3,107	340		453		198	Cont.	Cont.	Cont.
Miscellaneous (NAWC/NADEP)	WX/RX	Various	575	679	Various	904	Various	395	Cont.	Cont.	Cont.
Subtotal Support			575	679		904		395	Cont.	Cont.	Cont.
Total Cost			78,789	16,823		21,169		9,893	Cont.	Cont.	Cont.

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Exhibit R-3, Project Cost Analysis
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Exhibit R-2a, RDT&E Project Justification		Date: February 2000							
APPROPRIATION/BUDGET ACTIVITY RDT&E/BA6	Program Element Name & No. 0604258N/Target Systems Development	Project Name and Number 20612/Surface Targets Development							
COST (\$ in Millions)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	Cost to Complete	Total Cost
Total P.E. Cost	941	1,094	1,127	1,165	1,169	1,166	1,232	CONT.	CONT.
20612/Surface Targets Development									
Quantity of RDT&E Articles & cost	1	1	1	1	1	1	1		
<p>A. Mission Description and Budget Item Justification: This project develops seaborne targets systems and their related target augmentation systems in support of air-to-surface and surface-to-surface weapons test and evaluation and fleet training.</p> <p>FY 1999 PLAN:</p> <ul style="list-style-type: none"> • (\$40) Continue Requirements Study Update. (Oct 98-Sep 99) • (\$160) Continue Weapons System/Emitter, Target Augmentation System (TAS) Upgrade. (Oct 98-Sep 99) • (\$47) Continue Target/Threat Characterization and Validation (formally Modeling and Simulation). (Oct 98-Sep 99) • (\$352) Continue Command and Control System Upgrade Development. (Oct 98-Sep 99) • (\$120) Commence development of Target Scoring System. (Oct 98-Sep 99) • (\$222) Procure prototype off-the-shelf boat for testing and evaluation of enhanced High Speed Maneuverable Seaborne Target (HSMST). (Oct 98-Sep 99) 15 USC 638. <p>FY 2000 PLAN:</p> <ul style="list-style-type: none"> • (\$40) Continue Requirements Study Update. (Oct 99-Sep 00) • (\$170) Continue Weapons System/Emitter, TAS Upgrade. (Oct 99-Sep 00) • (\$60) Continue Target/Threat Characterization and Validation. (Oct 99-Sep 00) • (\$280) Continue Command and Control System Upgrade Development. (Oct 99-Sep 00) • (\$300) Continue development of Target Scoring System. (Oct 99-Sep 00) • (\$244) Procure prototype off-the-shelf boat for testing and evaluation of enhanced HSMST. (Oct 99-Sep 00) <p>FY 2001 PLAN:</p> <ul style="list-style-type: none"> • (\$45) Continue Requirements Study Update. (Oct 00-Sep 01) • (\$180) Continue Weapons System/Emitter, TAS Upgrade. (Oct 00-Sep 01) • (\$60) Continue Target/Threat Characterization and Validation. (Oct 00-Sep 01) • (\$290) Continue Command and Control System Upgrade Development. (Oct 00-Sep 01) • (\$301) Continue development of Target Scoring System. (Oct 00-Sep 01) • (\$251) Procure prototype off-the-shelf boat for testing and evaluation of enhanced HSMST. (Oct 00-Sep 01) 									

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APPROPRIATION/BUDGET ACTIVITY RDT&E/BA6	Exhibit R-2a, RDT&E Project Justification Program Element Name & No. 0604258N/Target Systems Development	Date: February 2000																																																						
<p>B. Program Change Summary:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">FY 2000 President's Budget:</td> <td style="width: 10%; text-align: center;">1,037</td> <td style="width: 10%; text-align: center;">FY 2000</td> <td style="width: 10%; text-align: center;">1,101</td> <td style="width: 10%; text-align: center;">FY 2001</td> <td style="width: 10%; text-align: center;">1,183</td> </tr> <tr> <td>Adjustment to FY 1999 Appropriated Value/</td> <td style="text-align: center;">-96</td> <td></td> <td style="text-align: center;">-7</td> <td></td> <td style="text-align: center;">-56</td> </tr> <tr> <td>FY 2000 PRES Budget:</td> <td style="text-align: center;">941</td> <td></td> <td style="text-align: center;">1,094</td> <td></td> <td style="text-align: center;">1,127</td> </tr> <tr> <td>FY 2001 PRES Budget Submit:</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>Funding: FY99 reductions are miscellaneous undistributed reductions (-\$96K), FY00 reductions are for miscellaneous undistributed reductions (-\$7K), FY01 reductions are for miscellaneous undistributed reductions (-\$56K).</p> <p>Schedule: Not applicable Technical: Not applicable</p> <p>C. Other Program Funding Summary</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 10%; text-align: center;">FY 1999</th> <th style="width: 10%; text-align: center;">FY 2000</th> <th style="width: 10%; text-align: center;">FY 2001</th> <th style="width: 10%; text-align: center;">FY 2002</th> <th style="width: 10%; text-align: center;">FY 2003</th> <th style="width: 10%; text-align: center;">FY 2004</th> <th style="width: 10%; text-align: center;">FY 2005</th> <th style="width: 10%; text-align: center;">To Complete</th> <th style="width: 10%; text-align: center;">Total Cost</th> </tr> </thead> <tbody> <tr> <td>OPN Line 551800 Unmanned Seaborne Targets 1,935</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>OPN Line 545500 ASW Range Support Equipment</td> <td style="text-align: center;">6,371</td> <td style="text-align: center;">6,904</td> <td style="text-align: center;">6,047</td> <td style="text-align: center;">7,630</td> <td style="text-align: center;">7,795</td> <td style="text-align: center;">7,947</td> <td style="text-align: center;">CONT.</td> <td></td> <td></td> </tr> </tbody> </table> <p>CONT. (U) Related RDT&E: Not applicable</p> <p>D. Acquisition Strategy: Not applicable</p> <p>E. Schedule Profile: Not applicable</p>			FY 2000 President's Budget:	1,037	FY 2000	1,101	FY 2001	1,183	Adjustment to FY 1999 Appropriated Value/	-96		-7		-56	FY 2000 PRES Budget:	941		1,094		1,127	FY 2001 PRES Budget Submit:							FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Complete	Total Cost	OPN Line 551800 Unmanned Seaborne Targets 1,935										OPN Line 545500 ASW Range Support Equipment	6,371	6,904	6,047	7,630	7,795	7,947	CONT.		
FY 2000 President's Budget:	1,037	FY 2000	1,101	FY 2001	1,183																																																			
Adjustment to FY 1999 Appropriated Value/	-96		-7		-56																																																			
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OPN Line 545500 ASW Range Support Equipment	6,371	6,904	6,047	7,630	7,795	7,947	CONT.																																																	

**R-1 Item No. 134
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EXHIBIT R-2, FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604759N** **PROJECT NUMBER: W2195**
PROGRAM ELEMENT TITLE: Major T&E Investment **PROJECT TITLE: T&E Investment**

(U) COST: (Dollars in Thousands)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To	Total
<u>Project Number & Title</u>	<u>Actual</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W2195 Test and Evaluation Investment	16,764	42,386	40,707	42,159	50,520	51,161	53,670	Cont.	Cont.
W2447 East Coast Communications	3,874	0	0	0	0	0	0		3,874
W2799 NAWC, PAX River Tracking Systems Upgrades	0	1,989	0	0	0	0	0		1,989
W2800 Advanced Virtual Environment	0	1,989	0	0	0	0	0		1,989
TOTAL	20,638	46,364	40,707	42,159	50,520	51,161	53,670	Cont.	Cont.

A. (U) **MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:** This project improves visibility of Test and Evaluation (T&E) resources across the Services for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUJTEC), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point MUGU, CA and China Lake, CA; and the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.

(U) **JUSTIFICATION FOR BUDGET ACTIVITY:** This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

**R-1 Line Item 135
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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604759N PROJECT NUMBER: W2195
 PROGRAM ELEMENT TITLE: Major T&E Investment PROJECT TITLE: T&E Investment

(U) COST: (Dollars in Thousands)

Project Number & Title W2195 Test and Evaluation Investment	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To	Total
	Actual	Budget	Estimate	Estimate	Estimate	Estimate	Estimate	Complete	Program
	16,764	42,386	40,707	42,159	50,520	51,161	53,670	Cont.	Cont.
TOTAL	16,764	42,386	40,707	42,159	50,520	51,161	53,670	Cont.	Cont.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project improves visibility of Test and Evaluation (T&E) resources across the Services for Major T&E investment funding. These funds correct major deficiencies, improve T&E capabilities, and increase T&E support effectiveness. The T&E Investment project provides support for the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCEN DET AUTEC), Andros Island, Bahamas; the Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point MUGU, CA and China Lake, CA; and the Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
- (\$6,300) NAVUNSEAWARCEN DET AUTEC. Continued the Tracking Hydrophone Replacement project.
 - (\$7,072) NAVAIRCENWPNDIV. Continued to modernize core instrumentation capability. Completed Kineto tracking mount (KTM) version "B" prototype development and validation to upgrade existing mounts with video trackers, infrared (IR) cameras, telescopes, and microwave transmission capability. Initiated the upgrade of six Kineto tracking mounts to the KTM-B version. Continued high rate telemetry data acquisition and processing upgrades at the Sea Range. Completed land range radar upgrades. Initiated the transfer and refurbishment of an ARSR-3 air surveillance radar to the Sea Range. Completed the installation of a digital microwave link from Point Mugu to China Lake via Edwards Air Force Base.
 - (\$3,392) NAVAIRWARCENACDIV. Continued Instrumentation Component Replacement (ICR) efforts on existing flight test and ground test systems to maintain core capabilities. Completed upgrade of dynamic avionics measurement capabilities. Initiated the common avionics instrumentation system efforts for procurement of hardware suites.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N
PROGRAM ELEMENT TITLE: Major T&E Investment

PROJECT NUMBER: W2195
PROJECT TITLE: T&E Investment

2. (U) FY 2000 PLAN:

- (\$6,945) NAVUNSEAWARCEN DET AUTE. Complete the Tracking Hydrophone Replacement project. Continue ICR efforts. Initiate Radar Systems Improvement Project. Initiate Off-Board Advanced Systems Stimulator Project. Initiate the Underwater Range Data Communication Project.
- (\$19,750) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete six and initiate upgrade of an additional six version "B" Kineto tracking mounts with video tracker, IR cameras and telescopes, and microwave transmission capability. Complete upgrade to all Weapons Division ranges data presentation and display systems. Continue high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Complete the refurbishment and installation of the ARSR-3 radar at the Sea Range. Initiate the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Initiate an integrated Target Control Keep Alive project until a new target control system is developed and fielded. Initiate modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Initiate modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Initiate a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers. Initiate replacement of obsolete GPS receivers and operating software with commercial off-the-shelf receivers and inertial reference units.
- (\$2,839) Network Centric Warfare (NCW) Implementation. This project is identified as a consolidated Test and Evaluation modernization effort on behalf of NAVAIRWARCENWPNDIV and NAVAIRWARCENACDIV that refocuses investments towards interconnection of existing facilities. Initiate the establishment of an enterprise federation of interconnected facilities that will utilize a common scheduling tool, interoperable models and a common network. NCW integrates Research, Development, Test and Evaluation facilities to optimize support for air combat systems integration into future joint warfare systems. Use existing communications infrastructure Defense Research Engineering Network and Defense Information Systems Network. Procure hardware and software to improve facility connectivity, establish software capabilities such as Distributed Interactive Simulation and High Level Architecture to support interoperability testing, and develop needed collaborative tools to operate the federation.
- (\$11,852) NAVAIRWARCENACDIV. Continue to modernize core instrumentation capability. Modernize two RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Replace aging Telemetry acquisition and processing equipment. Replace and upgrade obsolete image generators and video display systems at the Manned Flight Simulator facility. Develop full-spectrum dynamic avionics and aircraft signature measurement system. Procure Common Avionics Instrumentation System (CAIS) hardware suites. Provide fiber-optic connectivity between multiple sites and range facilities. Correct deficiency in tactical electronic warfare simulators. Develop and install radio frequency to fiber optic interface system.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604759N PROJECT NUMBER: W2195
PROGRAM ELEMENT TITLE: Major T&E Investment PROJECT TITLE: T&E Investment

- (U) FY 2000 PLAN: (continued)
- (\$1,000) Joint Modeling and Simulation System (JMSS). Initiate efforts to develop a tri-service simulation infrastructure that will assist model developers, engineers, and analysts in the development of digital models, configuration and execution of simulations and analysis of simulation capabilities.

- (U) FY 2001 PLAN:
 - (\$6,915) NAVUNSEAWARCON DET AUTEK. Continue ICR efforts. Continue Radar Systems Improvement efforts. Continue the Off-Board Advanced Systems Stimulator Project. Continue the Underwater Range Data Communication Project.
 - (\$14,740) NAVAIRCENWPNDIV. Continue to modernize core instrumentation capability. Complete high rate telemetry data acquisition and processing upgrades from one to four 20Mb/s data streams at the Sea Range. Complete the upgrade of two metric radar (3 and 4 of 7) electronic systems and control consoles and add moving target indicators, automatic calibration and computer controls of chart recorders at San Nicolas Island. Complete the existing Integrated Target Control System Keep Alive project until a new target control system is developed and fielded. Continue modernization of air traffic control radar processing systems, controller consoles and voice switches to systems that will be compatible with the Federal Aviation Administration (FAA) and non-Major Range Test and Facility Base (MRTFB) Department of Defense (DoD) air control network. Continue modernizing deteriorated copper cables providing data, video and communications within the Sea Range complex. Continue a project to assemble and field remote, fixed and mobile telemetry receiving stations to provide full land range coverage required by customers. Complete Kineto tracking mounts with video tracker, IR cameras and telescopes, and microwave transmission capability. Complete replacement of obsolete GPS receivers and operating software.
 - (\$3,078) Continue Network Centric Warfare (NCW) implementation. Continue the consolidated Test and Evaluation effort on behalf of NAVAIRWARCONWPN and NAVAIRWARCONACDIV that refocuses investments towards interconnection of existing facilities. Continue the establishment of an enterprise federation of interconnected facilities that will utilize a common scheduling tool, interoperable models and a common network. Continue to integrate Research, Development, Test and Evaluation facilities to optimize support for air combat systems integration into future joint warfare systems. Continue to use existing communications infrastructure Defense Research Engineering Network and Defense Information Systems Network. Continue to procure hardware and software to improve facility connectivity, establish software capabilities such as Distributed Interactive Simulation and High Level Architecture to support interoperability testing, and develop needed collaborative tools to operate the federation
 - (\$14,374) NAVAIRWARCONACDIV. Continue to modernize core instrumentation capability. Continue to modernize two RIR-778 Range Instrumentation radars and the Multiple Target Instrumentation Radar. Continue to replace aging Telemetry acquisition and processing equipment. Continue to replace and upgrade obsolescent image generators and video display systems at the Manned Flight Simulator facility. Continue to develop full-spectrum dynamic avionics and aircraft signature measurement system. Continue procurement of Common Avionics Instrumentation System (CAIS) hardware suites. Continue to provide fiber-optic connectivity between multiple sites and range facilities. Continue to correct deficiency in tactical electronic warfare simulators. Continue to develop and install radio frequency to fiber optic interface system.
 - (\$1,600) JMSS. Continue efforts to develop a tri-service simulation infrastructure that will assist model developers, engineers, and analysts in the development of digital models, configuration and execution of simulations and analysis of simulation capabilities.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

PROJECT NUMBER: W2195
PROJECT TITLE: T&E Investment

BUDGET ACTIVITY: 6
PROGRAM ELEMENT: 0604759N
PROGRAM ELEMENT TITLE: Major T&E Investment

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	17,241	42,621	42,461
(U) Appropriated Value:	17,281	42,621	
(U) Adjustments from Pres Budget:	-477	-235	-1,754
(U) FY 2001 OSD/OMB Budget Submit:	16,764	42,386	40,707

CHANGE SUMMARY EXPLANATION:

FY 1999 net decrease of \$477 thousand reflects a \$320 thousand decrease for re prioritization of requirements within the Navy, a \$79 thousand decrease for Small Business Innovation Research assessment, and a \$78 thousand decrease for economic assumption. FY 2000 reflects a \$235 thousand decrease for an Across-the-Board Congressional rescission. FY 2001 net decrease of \$1,754 thousand reflects a \$1,542 thousand decrease for re prioritization of requirements within the Navy, a \$259 thousand decrease for revised economic assumptions; partially offset by a \$47 thousand increase for Military/Civilian Pay.

(U) Schedule: Not applicable

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E

(U) P.E. 0605807F: Test and Evaluation (Air Force)
 0605864N: Test and Evaluation (Navy)

(U) D. ACQUISITION STRATEGY: The overall program is designed to establish a synergism with investments that supports a corporate Navy goal of ensuring required Test and Evaluation capabilities are available for acquisition program test at the least possible cost. These projects enable Navy Test and Evaluation ranges to support test program milestone decisions as well as develop and field test capabilities needed to support advanced technology acquisition programs.

(U) E. SCHEDULE PROFILE: Not applicable

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759

PROJECT NUMBER: W2195
PROJECT TITLE: T&E Investment

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Network Centric Warfare Implementation	WX	NAWCWD, Point Mugu, CA				2,839	10/99	3,078	10/00		5,917	
Dynamic Avionics Measurements	WX	NAWCAD, Patuxent River, MD	10,432	1,772	10/98						12,204	
Tracking Hydrophone Replacement	WX	AUTEC, Newport, RI	8,272	6,300	10/98	2,200	10/99				16,772	
Tracking Mounts	WX	NAWCWD, Point Mugu, CA	7,238	1,470	10/98	2,655	10/99	1,303	10/00		12,666	
Range Telemetry Systems	WX	NAWCWD, Point Mugu, CA	4,874	1,012	10/98	2,293	10/99	1,147	10/00		9,326	
Air surveillance Radar	WX	NAWCWD, Point Mugu, CA	260	947	10/98	2,000	10/99				3,207	
Slep FPS-16	WX	NAWCWD, Point Mugu, CA				3,000	10/99	1,700	10/00		4,700	
Radar Sys Improvements	WX	AUTEC, Newport, RI				1,700	10/99	1,600	10/00	1,300	4,600	
CATS-Radars	WX	NAWCAD, Patuxent River, MD				1,100	10/99	900		1,225	3,225	
Test Monitoring and Processing	WX	NAWCAD, Patuxent River, MD				1,700	10/99	2,300	10/00	4,000	8,000	
Target Control System	WX	NAWCWD, Point Mugu, CA				1,000	10/99	150	10/00		1,150	
Off-Board Advanced Sys Stimulator	WX	AUTEC, Newport, RI				2,300	10/99	3,500	10/00	6,800	12,600	
Manned Flight Stimulator Upgrades	WX	NAWCAD, Patuxent River, MD				1,000	10/99	2,150	10/00	3,000	6,150	
MRTFB Surveillance	WX	NAWCWD, Point Mugu, CA				200	10/99	2,600	10/00	7,000	9,800	
Dynamic Multi-spectral Avionics Measure	WX	NAWCAD, Patuxent River, MD				1,725	10/99	2,700	10/00	4,800	9,225	
CAIS Equipment	WX	NAWCAD, Patuxent River, MD		294		2,410	10/99	2,600	10/00	2,500	7,804	
Cable Plant Phase II	WX	NAWCWD, Point Mugu, CA				1,500	10/99	3,000	10/00	2,500	7,000	

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0604759N

PROJECT NUMBER: W2195
 PROJECT TITLE: T&E Investment

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	FY 2001 Cost	FY 2001 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WX	NAWCAD, Patuxent River, MD		800	10/99	1,000					1,800	
WX	NAWCAD, Patuxent River, MD		858	10/99	804					1,662	
WX	NAWCWD, Point Mugu, CA		2,925	10/99	2,150					5,075	
WX	NAWCAD, Patuxent River, MD		1,259	10/99	900					2,159	
WX	NAWCWD, Point Mugu, CA		793	10/99	1,305				3,700	5,798	
WX	Various	305,703	4,969	10/98	4,884	10/99	2,915		CONT.	CONT.	
WX	AUTEC, Newport, RI		245	10/99	1,305	10/00			3,800	5,350	
MP	USAF, WPAFB, OH		1,000	10/99	1,600	10/00			2,500	5,100	
Subtotal Product Development		336,779	16,764		42,386		40,707		CONT.	CONT.	
Remarks											
Subtotal Support: Not applicable		0	0		0		0		0	0	0
Remarks											
Subtotal T&E: Not applicable		0	0		0		0		0	0	0
Remarks											
Subtotal Management:		0	0		0		0		0	0	0
Remarks											
Total Cost		336,779	16,764		42,386		40,707		CONT.	CONT.	

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0604759N** **PROJECT NUMBER: W2447**
PROGRAM ELEMENT TITLE: Major T&E Investment **PROJECT TITLE: East Coast Communications**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2799 East Coast Communications		0	0	0	0	0	0	0	3,874
TOTAL	3,874	0	0	0	0	0	0	0	3,874

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The East Coast Communications Network is a state of the art communications network that provides physical interconnectivity for the transmission of high speed digital data to multiple facilities integrating complex test and training scenarios into one seamless environment.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (\$3,874) Continued identification of interconnectivity and interoperability requirements. Procured required hardware and software to support program efforts. Supported several Research, Development, Test and Evaluation programs using distributed engineering efforts across existing Department of Defense wide-band networks. Provided technical support to the Navy acquisition community using the East Coast Communications Network. Continued defining test capabilities and cost benefits using the East Coast Communications Network system.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604759N
PROGRAM ELEMENT TITLE: Major T&E Investment

PROJECT NUMBER: W2447
PROJECT TITLE: East Coast Communications

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	3,991	0	0
(U) Appropriated Value:	4,000	0	
(U) Adjustments from President's Budget:	-117	0	0
(U) FY 2001 President's Budget Submit:	3,874	0	0

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 reflects a \$99 thousand decrease for the Small Business Innovative Research (SBIR) assessment and a \$18 thousand decrease for revised economic assumptions.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0604759N PROJECT NUMBER: W2447 PROJECT TITLE: East Coast Communications

Contract Method & Type	Performing Activity & Location	Total Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
			Cost	Date	Cost	Date	Cost	Date		
WX	NAWCAD, Patuxent River, MD	0	3,874	6/99	0		0		3,874	

Remarks:

Subtotal Support

0 0 0 0 0 0

Remarks:

Subtotal Test & Evaluation

0 0 0 0 0 0

Remarks:

Subtotal Management

0 0 0 0 0 0

Remarks:

Total Cost

0 3,874 0 0 0 3,874

**R-1 Line Item 135
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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
 PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TOTAL
	ACTUAL ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	ESTIMATE	PROGRAM
L2097 Manpower, Personnel, and Training		231	290	294	301	307	313	CONT.
		231						CONT.
R0132 CNO Program Analysis and Evaluation		108	304	309	314	316	329	CONT.
		104						CONT.
R0133 National Academy of Sciences/Naval Studies Board		1,942	2,059	2,114	2,134	2,253	2,354	CONT.
		1,803						CONT.
R0147 Operational Strategic and Tactical Effectiveness Analysis		165	463	471	476	480	500	CONT.
		162						CONT.
S2233 Naval Surface Warfare Studies		1,474	2,182	1,549	1,439	1,483	2,623	CONT.
		3,528						CONT.
S2354 Expeditionary Warfare Studies		0	478	474	467	474	487	CONT.
		0						CONT.
W2092 Naval Aviation Studies		2,465	1,842	2,280	2,270	2,287	2,339	CONT.
		2,465						CONT.
TOTAL		8,432	5,996	7,481	7,418	7,609	8,945	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides analytical support to the Secretary of the Navy and the Chief of Naval Operations as a basis for major policy, planning and acquisition program execution decisions. It supports research and development strategy development and planning. It supports studies in the areas of manpower, personnel, training, and aviation. It also develops analytical tools for evaluating effectiveness of U.S. weapons against potential foreign threat ships and submarines.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) PROGRAM CHANGE FOR TOTAL PE:			
(U) FY 2000 President's Budget:	5,031	8,531	8,124
(U) Appropriated Value:		8,531	
(U) Adjustments from FY 2000 PREBUDG:			
(U) SBIR\STTR Transfer		-45	
(U) Execution Adjustments	3,473		
(U) Program Adjustment			-13
(U) Congressional Reduction		-2,500	
(U) Inflation Adjustments	-27		
(U) Various Rate Adjustments			-55
(U) Congressional Rescissions		-35	
(U) FY 2001 PREBUDG Submission:	8,432	5,996	8,056

CHANGE SUMMARY EXPLANATION:

- (U) Schedule: Not applicable.
- (U) Technical: Not applicable.

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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TOTAL
L2097 Studies and Analysis Support, Navy								
TOTAL	231	231	290	294	301	307	313	CONT. CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Chief of Naval Personnel has an ongoing need for direct analyses of Navy manpower and personnel (MP) policies and program planning. This project provides an essential management tool to: (a) assess the effectiveness of existing MP policies and programs, (b) identify needs for new policies and programs, (c) determine the required manpower and training mix relative to changing demographic, societal and legislative/regulatory trends, and to evolving strategic and geopolitical factors, (d) study the impact of MP programs on Navy accession, retention, and performance, and (e) develop, validate and/or refine a broad range of MP forecasting models. The program permits Navy to more effectively utilize Research and Development expertise to respond to emergent Manpower and Personnel Training issues.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$75K) Completed a study entitled "Minority Representation in Officer Communities". Conducted a comprehensive analysis of career progression of white majority officers in selected communities against that of ethnic minorities. Career progression was measured by "survival rates" of the various demographic groups over successive promotion points along an officer's career: junior officer (O1 - O4), mid-career officer (O5), and senior officer (O6). Multivariate models were then developed to estimate how much of the variation in career progression could be attributed to ethnic difference based on such factors as prior job performance and prior assignment, which are causally related to career progression outcomes.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER: L2097

DATE: February 2000

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

PROJECT TITLE: Manpower Personnel & Training

• (U) (\$118) Using standard Business Process Reengineering methods, developed a detailed functional process diagram and assessment of the current Navy Personnel Change Station and Temporary Duty Under Instruction program budgeting and execution process and designed an improved process. The new process will yield more accurate move counts in the final budget year, provide improved processes for executing planned moves and create measures of effectiveness.

• (U) (\$38K) Completed a Naval Aviator Retention Modeling study to improve upon the current method to measure retention, the Cumulative Continuation Rate. The resulting models, once validated, will be used to redesign the aviator pipeline, to predict the effects of changes in bonus policies, and to predict shortages in numbers of department head and other billets.

2. (U) FY 2000 PLAN:

- (U) (\$79) Develop a Career Sea Pay Entitlement Model to address Officer and Enlisted retention incentives.
- (U) (\$4K) Update and validate Navy Pay Predictor, Officer Model for effective longevity management.
- (U) (\$45K) Develop Separations Pay Model for accurate Manpower and Personnel, Navy Appropriation requirements management and costing.
- (U) (\$67K) Conduct an evaluation of Performance Readiness Training Performance and attrition in view of existing Navy policy.

3. (U) FY 2001 PLAN:

- (U) (\$75K) Develop a requirements-based Selective Reenlistment Bonus Model.
- (U) (\$70K) Study the cost, productivity, and readiness impacts of family violence.
- (U) (\$75K) Conduct studies directed at personnel policies to support the reduced manning initiatives

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: L2097
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Manpower Personnel & Training

- (U) (\$70K) Conduct a study of stress-related health/adjustment problems of recruiters.
- B. (U) PROGRAM CHANGE SUMMARY: See Program Change For PE
- C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- D. (U) SCHEDULE PROFILE: Not applicable.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0132 CNO Program Analysis and Evaluation									
TOTAL	104	108	304	309	314	316	329	CONT.	CONT.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides analytical support to the Chief of Naval Operations and the Secretary of the Navy in evaluation of overall balance within total Navy programs. This includes such tasks as: (a) evaluation of force capabilities and requirements; (b) analysis of effectiveness of systems under development; (c) Secretary of Defense directed independent cost and effectiveness analyses of major Navy programs; and (d) items of Congressional interest as they relate to Navy programs. Deliverables consist of formal, structured documents containing or leading to conclusions and/or recommendations as well as the development and maintenance of databases and models. The use of databases and models is driven by the need to objectively and continually assess the impact of reduced funding and/or force drawdown upon Navy programs. They provide Navy planners and decision makers with objective, empirical data with which to make determinations regarding program planning and evaluation of issues. The models funded by this account are the primary tools used to formulate program balance in the assessment process (particularly the Readiness, Support and Infrastructure Assessment and the Investment Balance Review). The analyses based on these models form the heart of the Investment Balance Review, allowing the Navy to formulate and cost-out alternative force structure, manpower, infrastructure and readiness programs.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$104) Developed techniques for analysis of Navy Readiness requirements versus capabilities and to maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605152N

PROJECT NUMBER: R0132

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy
PROJECT TITLE: CNO Program Analysis and Evaluation

2. FY 2000 PLAN:

- (U) (\$108) Develop techniques for analysis of Navy Readiness requirements versus capabilities and to maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.

3. FY 2001 PLAN:

- (U) (\$120) Develop techniques for analysis of Navy Readiness requirements versus capabilities and to maintain the Aviation Readiness model and the Ships Resource-to-Readiness model.
- (U) (\$184) Conduct studies and analyses to support the Navy's Assessment process.

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999 ACTUAL ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TOTAL COMPLETE PROGRAM
R0133 National Academy of Science/Naval Studies Board	1,942	1,803	2,059	2,114	2,134	2,253	2,354	CONT. CONT.
TOTAL								

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the core program for the Naval Studies Board. As agreed upon between the Chief of Naval Operations (CNO) and the President of the National Academy of Sciences and with appropriate attention to the influence of the domestic economy, national objectives, social imperatives and anticipated military requirement, the Naval Studies Board will conduct and report upon surveys, investigations, and analyses in the field of scientific research and development applicable to the operation and function of the Navy. Reports consist of a briefing to the Assistant Secretary of the Navy (Research Development and Acquisition) (ASN (RD&A)) and the CNO and staff, and written technical reports.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$1,100) Continued research efforts and investigations in areas of interest to the Navy. Continue to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.

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DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: R0133
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: National Academy of Science/
Naval Studies Board

- (U) (\$842) Produced investigations of significant importance to the Navy concerning technology of the future, selected from proposals received from CNO and ASN (RD&A).

2. FY 2000 PLAN:

- (U) (\$685) Continue research efforts and investigations in areas of interest to the Navy. Continue to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.
- (U) (\$1,118) Produce investigations of significant importance to the Navy concerning technology of the future, selected from proposals received from CNO and ASN (RD&A).

3. (U) FY 2001 PLAN:

- (U) (\$732) Continue research efforts and investigations in areas of interest to the Navy. Continue to support annual Navy authorized activities of importance, such as the National Space Forum and the Weinblum Memorial Lecture Series.
- (U) (\$1,327) Produce investigations of significant importance to the Navy concerning technology of the future, selected from proposals received from CNO and ASN (RD&A).

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

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DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: R0133
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: National Academy of Science/
Naval Studies Board

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N

PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TO	TOTAL
R0147 Operational Strategic and Tactical Effectiveness Analysis	162	165	463	471	476	480	500	CONT.	CONT.
TOTAL									

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides the Chief of Naval Operations and the Secretary of the Navy direct analyses of Navy policy, strategy acquisition, and program planning in meeting the following objectives: (a) producing study results impacting upon important programs/issues; (b) identifying and evaluating policy and strategy alternatives and doctrine; and (c) evaluating the capabilities of programmed forces to accomplish missions assigned to the Navy. Deliverables consist of formal, structured documents containing or leading to conclusions and/or recommendations as well as the development and maintenance of databases and models. This project directly supports and is critical for conducting the Navy's joint mission assessments.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$162 Conducted reviews of the Capability Resource Allocation Display (CAPRAD) database and performed econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also updated and revalidated the Integrated Program Assessment System (IPAS) and other models in order to run these programs using revised allocation displays.

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DATE: February 1999

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: R0147
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Operational Strategic and Tactical Effectiveness Analysis

2. FY 2000 PLAN:

- (U) (\$35) Conduct reviews of the CAPRAD database and perform econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also update and revalidate the IPAS and other models in order to run these programs using revised allocation displays.
- (U) (\$130) Conduct studies and provide enhancements to Integrated Theater Engagement Model (ITEM), the primary tool for campaign analysis for Assessments and perform analysis of force structure requirements.

3. FY 2001 PLAN:

- (U) (\$170) Conduct reviews of the CAPRAD database and perform econometric/statistical analyses on the impact of changes resulting from downsizing and programmatic changes. Also update and revalidate the IPAS and other models in order to run these programs using revised allocation displays.
- (U) (\$293) Conduct studies and provide enhancements to ITEM, the primary tool for campaign analysis for Assessments and perform analysis of force structure requirements.

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Millions)

Project Number & Title	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
S2233 Naval Surface Warfare Studies		1,474	2,182	1,549	1,439	1,483	2,623	CONT.	CONT.
TOTAL	3,528	1,474	2,182	1,549	1,439	1,483	2,623	CONT.	CONT.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for analysis of the warfighting capability of Naval forces by examining specific selected numbers and mixes of surface combatants and other forces that are subjected to representative operational situations in a joint littoral environment. The U.S. strategic emphasis has shifted from global containment and warfighting to a global engagement and deference strategy with regional focus. As part of an overall effort at addressing future Naval force levels and capabilities, the Navy must assess the warfighting effectiveness of new operating concepts using different mixes of surface combatants operating in a littoral warfare environment and develop an investment strategy that supports the capabilities required. Required Operational Capabilities/Projected Operational Environment (ROC/POE) must be updated every two years or created for new ship classes. These ROC/POE's are vitally important in that mission requirements for ships drive equipment configurations, manning levels and associated shipboard accommodations, tailor ship and staff missions, capabilities, manning to new strategies, tactics, operational environments, and policies.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$3,528) Continued analyses to identify force capabilities considering various force mixes. These studies addressed the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Surface Warfare Forces, including new operational concepts, the numbers and mixes of surface combatants and other forces that are subjected to representative operational situations in a joint littoral environment. Measures of Effectiveness were used in characterizing Naval Surface Warfare capabilities for battle space dominance and for power projection. The results were applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses were applied

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BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy
to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Revised
ROC/POE instructions.

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DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: S2233
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Naval Surface Warfare Studies

2. (U) FY 2000 PLAN:

- (U) (\$1,474) Continue analyses to identify force capabilities considering various force mixes. These studies will address the warfighting and strategy requirements for effective, flexible and cost-effective Naval Surface Warfare Forces focused on the challenge of continuous operations in the littoral regions. Measures of Effectiveness will be used in characterizing Naval Surface Warfare capabilities for theater air dominance and precision land attack undergirded by maritime dominance. The results will be applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses will be applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces and directly support the DoN Assessment process. Revise ROC/POE instructions. Obligations initiated October 1999 and will be complete September 2000.

3. (U) FY 2001 PLAN:

- (U) (\$2,182) Continue analyses to identify force capabilities considering various force mixes. These studies will address the warfighting and strategy requirements for effective, flexible and cost-effective Naval Surface Warfare Forces focused on the challenge of continuous operations in the littoral regions. Measures of Effectiveness will be used in characterizing Naval Surface Warfare capabilities for theater air dominance and precision land attack undergirded by maritime dominance. The results will be applied to campaign scenarios and operational situations to scope, focus and interpret the analyses. The results of these analyses will be applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces and directly support the DoN Assessment process. Revise ROC/POE instructions. Obligations will initiate October 2000 and complete September 2001.

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

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BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: S2233
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Naval Surface Warfare Studies

(U) D. ACQUISITION STRATEGY: Not Applicable

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BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Millions)

Project Number & Title	FY 1999 ACTUAL ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL
S2354 Expeditionary Warfare Studies									
Total	0	373	478	474	467	474	487	CONT.	CONT.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides for analysis of the warfighting capability of Expeditionary forces, with emphasis on the joint littoral environment, by examining specific selected numbers and mixes of amphibious combatants, mine warfare forces and other forces that are subjected to represent operational situations in a joint littoral environment. The U.S. strategic emphasis has shifted from global containment and warfighting to a global engagement and deference strategy with regional focus. As part of an overall effort at addressing future Naval force levels and capabilities, the Navy must assess the warfighting effectiveness of new operational concepts using different mixes of expeditionary combatants operating in a littoral warfare environment and develop an investment strategy that supports the capabilities required.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS: Not applicable.

2. (U) FY 2000 PLANS:

- (U) (\$373) Initiate efforts for dedicated analyses of Expeditionary Warfare Studies. Continue analysis to identify force capabilities considering various force mixes. These studies will address the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Expeditionary Warfare Forces, including the numbers and mixes of expeditionary combatants, to include mine warfare forces and other forces that are subjected to represent operational situations in a joint littoral environment. Measures of Effectiveness will be used in characterizing Naval Expeditionary Warfare applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Obligations initiated in October 1999 and will be complete in September 2000.

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DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: S2354
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Expeditionary Warfare Studies

3. (U) FY 2001 PLANS:

- (U) (\$478) Continue analysis to identify force capabilities considering various force mixes. These studies will address the warfighting and national security policy and strategy requirements for effective, flexible and cost-efficient Naval Expeditionary Warfare Forces, including the numbers and mixes of expeditionary combatants, to include mine warfare forces and other forces that are subjected to represent operational situations in a joint littoral environment. Measures of Effectiveness will be used in characterizing Naval Expeditionary Warfare applied to strategic planning and investment strategies for future Joint Littoral Warfare Naval Forces. Obligations will initiate in October 2000 and complete in September 2001.

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) D. ACQUISITION STRATEGY: Not Applicable

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BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy

(U) COST: (Dollars in Thousands)

Project Number & Title	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	TOTAL
W2092 Naval Aviation Studies								
TOTAL	2,465	1,842	2,280	2,270	2,287	2,296	2,339	20,339

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports studies over a wide range of naval aviation issues that support the ongoing Joint Strike Assessment (JSA) guidelines. Results provide a basis for recommendations to the Chief of Naval Operations concerning major policy, planning, and acquisition program decisions. This effort is a management initiative, which will allow allocation of study resources in a timely manner according to priorities. This ongoing program will continue to leverage more detailed program specific analysis in order to gain insight in acquisition of various weapon systems and their impact on force structure, manning levels, operational readiness and Carrier Air Wing effectiveness. This program will also support various Analysis of Alternatives (AOA) Studies.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$375) Continued analyses of Tactical Air (TACAIR) modernization alternatives. Developed a prioritized list of alternatives to determine which technologies offer the best promise for improving safety of flight

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DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: W2092
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Naval Aviation Studies

for naval aircraft. Completed a study to investigate the technology required to marinize a Medium Endurance UAV for carrier based operations. Developed a draft roadmap for TACAIR high speed weapons.

- (U) (\$50) Continued studies to support JSA issues. Developed updated naval aircraft warfare attrition and utilization factors.
- (U) (\$850) Completed the Multi-Mission Maritime Aircraft Study. Developed six concept designs and the corresponding force levels and cost analyses. Completed prioritized technology plan.
- (U) (\$300) Continued Carrier Air Wing (CVW) capabilities analysis effort. Developed the scenarios and gathered the fleet data to conduct tradeoffs of the limiting factors and potential capacity in projecting combat capability from the CVW.
- (U) (\$890) Provided support for general aviation related AOA's and studies within Naval Air Systems Command (NAVAIR) and Office of the Chief of Naval Operations (OPNAV).

2. FY 2000 PLAN:

- (U) (\$216) Prepare a naval aviation developmental plan that will provide for the future operational capabilities required to support network centric warfare including future vertical lift requirements.
- (U) (\$499) Conduct studies to explore the potential utilization of high speed weapons with initial operating capability in FY 2010 to FY 2015. Study is to establish operational requirements and conduct preliminary analysis for this family of weapons.
- (U) (\$500) Complete studies to support JSA issues for the current and follow-on cycle
- (U) (\$200) Begin studies to evaluate concepts of operations for strike missions.
- (U) (\$427) Provide support for general aviation related AOA's and studies within NAVAIR and OPNAV.

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BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605152N PROJECT NUMBER: W2092
PROGRAM ELEMENT TITLE: Studies and Analysis Support, Navy PROJECT TITLE: Naval Aviation Studies

3. FY 2001 PLAN:

- (U) (\$500) Expand the CVW capabilities analysis effort. Utilizing the information developed in FY 2000 for a single CVW, expand the tradeoffs for a Battle Force consisting of three carrier battle groups in three scenarios. Evaluate the limiting factors and synergy of tasking, limiting factors and potential in projecting combat capability.
- (U) (\$300) Develop techniques for analysis of naval aviation warfare requirements versus current system capabilities.
- (U) (\$277) Expand the studies to evaluate future concepts for strike concepts of operations.
- (U) (\$200) Continue the studies to investigate alternatives for advanced weapon initiatives.
- (U) (\$928) Continue the study to develop requirements for the EA-6B follow-on.
- (U) (\$75) Provide support with general aviation related AOA's and studies with NAVAIR and OPNAV.

(U) B. PROGRAM CHANGE SUMMARY: See Program Change Total For PE

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

(U) D. ACQUISITION STRATEGY: Not Applicable

(U) E. SCHEDULE PROFILE: Not Applicable

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BUDGET ACTIVITY: 6 FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: FEBRUARY 2000
 PROGRAM ELEMENT: 0605154N
 PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
C0031 Marine Corps Operations Analysis Group				4,433	4,568	4,808	4,902	CONT.	CONT.
R0148 Center for Naval Analyses, Navy	37,508	39,106	39,535	40,499	41,035	41,614	43,251	CONT.	CONT.
TOTAL	41,676	43,452	43,889	44,932	45,603	46,422	48,153	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The Center for Naval Analyses (CNA) is the Department of the Navy's only Federally Funded Research and Development Center. CNA provides independent, objective, and expert analyses based on its unique access to sensitive data and hands-on exposure to fleet operations gained through its world-wide field program. CNA's Research Program is centrally funded by this program element and is primarily concentrated along 1 Marine Corps category and 10 Navy categories of study called product areas. These product areas are structured to enhance CNA's focus of research and analysis upon the major present and future needs and issues of the Navy and the Marine Corps. Because of rapid advances in technology, changes in the fleet, the increasing complexity of weapon systems, and reductions in manpower, force structure, and budgets, the Navy and Marine Corps have a greater need for analyses that are both sophisticated and timely. CNA is highly qualified to meet that need.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET
PROGRAM ELEMENT: 0605154N
PROGRAM ELEMENT TITLE: Center for Naval Analyses

BUDGET ACTIVITY: 6

DATE: FEBRUARY 2000

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) PROGRAM CHANGE SUMMARY:			
(U) FY 2000 President's Budget:	41,882	43,694	44,307
(U) Appropriated Value:		43,694	
(U) Adjustments from PRESBUDG:			
(U) Various Rate Adjustments	-200		-418
(U) Congressional Rescissions		-242	
(U) Execution Adjustments	-6		
(U) FY 2001 PRESBUDG Budget Submission:	41,676	43,452	43,889

(U) CHANGE SUMMARY EXPLANATION:

- (U) Schedule: Not applicable.
- (U) Technical: Not applicable.

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Budget Item Justification
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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM CONT.
C0031 Marine Corps Operations and Analysis Group (MCOAG)	4,168	4,343	4,354	4,433	4,568	4,808	4,902	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the Marine Corps portion of the Department of the Navy's (DoNs) Center for Naval Analyses (CNA) Research Program. It is managed as an element of the Marine Corps Studies System. This program provides the Marine Corps with independent and objective research and analysis of specific issues/topics appropriate for a Federally Funded Research and Development Center (FFRDC). As a result of the finding and recommendations of the Fiscal Year 1997 Defense Science Board, the Marine Corps refocused the type of support CNA provides. This refocusing effort reduced the number of field representatives for the Operational Forces commanders and established five specific areas of expertise for CNA to establish and maintain: (1) Logistics, (2) Manpower, (3) Programs and Resources, (4) Naval Integration, and (5) Operations. The scientific analyst support was also reduced from nine part-time (each providing 20% per year) to five full-time scientific analysts, one for each of the five focus areas. The revised program continues to provide analytical support for field exercise, ad hoc, and quick response requirements.

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Budget Item Justification
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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$323) Continued maintenance of the LOGISTICS Area of Expertise including the funding of one scientific analyst. Executed high-priority logistics related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$496) Continued maintenance of the MANPOWER Area of Expertise including the funding of one scientific analyst. Executed high-priority force structure and personnel related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$514) Continued maintenance of the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Executed high-priority program, resource, and readiness related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$545) Continued maintenance of the OPERATIONS Area of Expertise including providing analysts for field exercises and the funding of one scientific analyst. Executed high-priority Joint and MAGTF operations related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$481) Continued maintenance of the Naval Integration Area of Expertise including the funding of one scientific analyst. Executed high-priority Naval (From the Sea and OMFTS) and non-linearity aspects of combat related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$1,002) Continued staffing five field representative billets at COMMARFORPAC, CGI MEF, CG II MEF, CG III MEF, and CG MCAGCC. Established new field billet at COMMARFORLANT.
- (U) (\$807) Executed 4 to 6 "Quick Response" study projects (start to finish within 90 days); AD HOC support for the immediate analytical support requirements; and administrative support functions including: General Concept Development, CNA self-Initiated Analysis Efforts, and Award Fee funding.

2. (U) FY 2000 PLAN:

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BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

- (U) (\$495) Continues maintenance of the LOGISTICS Area of Expertise including the funding of one scientific analyst. Execute high-priority logistics related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
 - (U) (\$400) Continues maintenance of the MANPOWER Area of Expertise including the funding of one scientific analyst. Execute high-priority force structure and personnel related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
 - (U) (\$401) Continues maintenance of the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Execute high-priority program, resource, and readiness related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
 - (U) (\$445) Continues maintenance of the OPERATIONS Area of Expertise including providing analysts for field exercises and the funding of one scientific analyst. Execute high-priority Joint and MAGTF operations related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
 - (U) (\$545) Continues maintenance of the Naval Integration Area of Expertise including the funding of one scientific analyst. Execute high-priority Quadrennial Defense Review (QDR), Naval (From the Sea and OMFTS) and non-linearity aspects of combat related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
 - (U) (\$1,115) Funds the staffing of six field representative billets at COMMARFORPAC, COMMARFORLANT, CG I MEF, CG II MEF, CG III MEF, and CG MCAGCC.
 - (U) (\$942) Execute 5 to 8 "Quick Response" study projects (start to finish within 90 days); AD HOC support for the immediate analytical support requirements; and administrative support functions including: General Concept Development, CNA Self-Initiated Analysis Efforts, and Award Fee funding.
3. (U) FY 2001 PLAN:
- (U) (\$495) Continues maintenance of the LOGISTICS Area of Expertise including the funding of one scientific analyst. Execute high-priority logistics related study and analysis requirements included in the annual Marine Corps Studies Master Plan.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605154N

PROJECT NUMBER: C0031

PROGRAM ELEMENT TITLE: Center for Naval Analyses

PROJECT TITLE: Marine Corps Operations and Analysis Group

- (U) (\$400) Continues maintenance of the MANPOWER Area of Expertise including the funding of one scientific analyst. Execute high-priority force structure and personnel related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$401) Continues maintenance of the PROGRAMS and RESOURCES Area of Expertise including the funding of one scientific analyst. Execute high-priority QDR, program, resource, and readiness related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$469) Continues maintenance of the OPERATIONS Area of Expertise including providing analysts for field exercises and the funding of one scientific analyst. Execute high-priority Joint and MAGTF operations and OMFTS implementation related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$545) Continues maintenance of the Naval Integration Area of Expertise including the funding of one scientific analyst. Execute high-priority QDR, Naval (From the Sea and OMFTS) and non-linearity aspects of combat related study and analysis requirements included in the annual Marine Corps Studies Master Plan.
- (U) (\$1,115) Funds the staffing of six field representative billets at COMMARFORPAC, COMMARFORLANT CG I MEF, CG II MEF, CG III MEF and MCAGCC.
- (U) (\$929) Execute 5 to 8 "Quick Response" study projects (start to finish within 90 days); AD HOC support for the immediate analytical support requirements; and administrative support functions including: General Concept Development, CNA Self-Initiated Analysis Efforts, and Award Fee funding.

B. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) PE 0605873M (Marine Corps Program Wide Support)

C. (U) SCHEDULE PROFILE: Not applicable.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605154N
 PROGRAM ELEMENT TITLE: Center for Naval Analyses

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0148 Center for Naval Analyses, Navy	37,508	39,106	39,535	40,499	41,035	42,614	43,251	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports the Navy's portion of the Center for Naval Analyses (CNA) Research Program, which is primarily concentrated along 10 Navy categories of study called product areas. These product areas include the following: 1) Manpower, Medical and Training; 2) Policy and Operations; 3) Infrastructure and Readiness; 4) Space and Electronic Warfare/Command, Control, Communications, and Computers/Intelligence and Information and Modeling and Simulation; 5) Systems and Force Structure; 6) Research, Development and Acquisition; 7) Systems and Tactics; 8) Field Program; 9) Scientific Analyst Program; and 10) Quick Response Projects. CNA's analyses have resulted in substantial improvements in force structure, fleet effectiveness, and significant cost avoidance.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 (U) (\$37,508) Addressed issues of major importance to Navy leadership in the above research areas. CNA's Research program was continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, continued to comprise approximately 18% of the funding. The program also emphasized the Policy and Operations and System and Force Structure product areas.

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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605154N PROJECT NUMBER: R0148
PROGRAM ELEMENT TITLE: Center for Naval Analyses PROGRAM TITLE: Center for Naval Analyses,
Navy

2. (U) FY 2000 PLAN:
 - (U) (\$39,106) Address issues of major importance to Navy leadership in the above research areas. CNA's Research Program will be continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, will continue to comprise approximately 20% of the funding. Additionally, emphasis will be in the Policy and Operations and System and Force Structure product areas.
3. (U) FY 2001 PLAN:
 - (U) (39,535) Address issues of major importance to Navy leadership in the above research areas. CNA's Research Program will be continually updated to support the Navy efficiently and effectively. Support for the CNA field program, which assigns analysts to over 40 locations around the world and at sea, will continue to comprise approximately 20% of the funding. Additionally, emphasis will be in the Policy and Operations and System and Force Structure product areas.
- B. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- (U) RELATED RDT&E:
 - (U) PE 0605152N (Studies and Analysis Support)
- C. (U) SCHEDULE PROFILE: Not applicable.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605155N
PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

(U) COST: (Dollars in thousands)

OBJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL PROGRAM
0151 Intertype Tactical Development and Evaluation	2,689	3,086	2,886	2,940	2,798	2,663	2,933	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element supports all naval warfare task areas and provides technical and analytical support to the fleet operating forces to develop and evaluate tactics for newly evolving force structures, new and existing weapon system employment, and changing threat scenarios to improve and measure force readiness.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605155N PROJECT NUMBER: R0151
PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation Intertype Tactical Development and Evaluation

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$422) Torpedo selection/employment. Funded and developed Sango (small diesel) model. Developed Tactical Memorandum (TACMEMO) for employment of Mk46/48/50 torpedoes against Sango in high priority, littoral areas using high fidelity, range dependent model in the Navy Underwater Warfare Center Weapons Acoustic Facility.
- (U) (\$ 68) HARPOON (air platform) tactics against small combatants in the littoral. Developed Harpoon engagement tactics against small missile boats in a littoral environment. Evaluated results of harpoon seekers ability to discriminate a small fast target in a dense shipping environment.
- (U) (\$ 9) Cancelled Aegis employment tactics in Theater Missile Defense (TMD). Program cancelled due to lack of practicable expertise in this area. Project is expected to be reviewed in FY-01.
- (U) (\$ 97) Sea Combat Commander Procedures. Developed a standard employment concept, currently referred to as the Sea Combat Commander (SCC), as a subordinate warfare commander option under the Composite Warfare Commander. Based on development work on the "integrated Battle Organization" by Naval Doctrine Command (NAVDOCCOM), the September 1995 Navywide OPGEN instituted SCC as an optional Composite Warfare Command (CWC) element which principally combines the functions of the Surface Warfare Center (SUWC) and the Anti-Submarine Warfare Commander (ASW).
- (U) (\$150) Tactical Aircraft (TACAIR) tactics against maritime threats. Determined effectiveness of current SUW tactics/weapons against small boat threat in littoral. Developed Tactics Techniques and Procedures to counter small boat threat in the littoral environment.
- (U) (\$ 95) Procedures for identification of surface contacts. Developed a TACMEMO that identifies specific platforms, equipment, and tactics available to assist the task group commander and surface warfare commander (SUWC) in planning and executing nighttime classification and identification of surface contacts. The SUW

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROJECT NUMBER: R0151

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

PROJECT TITLE: Intertype Tactical Development and Evaluation

watchstander in the fleet will have a document that will give guidance on selecting assets to perform a search, recommendations on search planning methodology and guidance on assessing input information to arrive at a contact identification at night.

- (U) (\$135) Strike tactics against camouflage, concealment and deception land targets. Developed Tactics Techniques and Procedures for countering the application of Camouflage, Concealment, Deception (CCD) techniques to strike aircraft target identification procedures.
- (U) (\$128) USQ-113 communication electronic attack procedures. Developed a TACMEMO for employment of EA-6B USQ-113 for communications/datalink jamming. Developed a test plan to evaluate new employment techniques for both ALQ-99 and USQ-113 jamming pods.
- (U) (\$208) Network Centric Anti-Surface Warfare (ASW) Tactics. Developed guidance for the use of the emergent Command, Control, Communication and Computer Intelligence (C⁴I) infrastructure in the context of coordinated versus independent anti-surface warfare. Developed recommended tactical use of current and emergent CI networks.
- (U) (\$150) Continued development of HELLFIRE missile tactics. This project will provide the fleet with tactics to exploit the vulnerability of surface craft to the HELLFIRE missile and the most effective placement of ordnance. In addition, provide procedures for use of Forward Looking Infrared Radar (FLIR) in both over land and over water missions.
- (U) (\$ 75) Acoustic jamming procedures. Investigated and developed operating guidelines for using active sonar from multiple platforms to confuse enemy submarines in the littoral environment. This project will provide the fleet with tactics to prevent hostile submarines from obtaining a firing solution without using its periscope.
- (U) (\$124) Using the HARPOON (surface platform) in the littoral tactics. This project will give Battle Group Commanders an added capability and asset to defend the Battle Group against the attack of small combatants in littoral regions. The TACMEMO and TACAID will give crews the tools to be more effective in the surface surveillance mission.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

PROJECT NUMBER: R0151

PROJECT TITLE: Intertype Tactical Development and Evaluation

- (U) (\$257) Battle Group (BG) tactics to counter influence mine threats. Developed a single tactical reference manual for use in countering multiple types of influence mines at differing speeds and deployment patterns. Assessed the BG signature vulnerabilities for the different patterns and speeds.
 - (U) (\$104) Mine Countermeasures (MCM) tactics for AQS-14. Developed tactics for employment of the AQS-14 system in the clearing of a moored minefield. Developed a set of performance data for employment.
 - (U) (\$140) Developed BG ASW Tactics. A comprehensive tactically based system for locating and targeting diesel submarines in winter littoral conditions.
 - (U) (\$199) Tactics to minimize mast exposure vulnerability to new technologies. Developed a Tactical decision aid to assess the threat of detection of submarine masts with newer radars/FLIR systems available for use in the littoral environment.
 - (U) (\$ 65) FLIR tactics to provide periscope or snorkel detection. Developed TACMEMO to exploit capabilities of AAS-44 (FLIR) in detecting periscopes/snorkel of a diesel submarine threat in the littoral environment.
 - (U) (\$110) AEGIS cruiser Area Air Defense Commander cell. Developed Tactics Techniques and Procedures for Navy ships outfitted with the AEGIS Area Defense Commander (AADC) cell equipment, to support the embarkation of the AADC commander. Defined the relationships and responsibilities expect of this ship when supporting the AADC within a JTF environment.
 - (U) (\$153) Initiate development of MCM-1 sweeping tactics.
2. (U) FY 2000 PLAN:
- (U) (\$200) Develop a method of in-current minesweeping. Develop tactics for safe current sweeping techniques for the MCM-1 class ship against specific magnetic influence mine threats.

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DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROJECT NUMBER: R0151

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

PROJECT TITLE: Intertype Tactical Development and Evaluation

- (U) (\$145) Development of a methodology to defend computer networks against intrusion. Develop a formal set of guidelines for protecting Naval computer networks against new and sophisticated intrusion techniques. Consolidate and analyze the existing doctrine and identify areas for more robust security measures
- (U) (\$95) Develop a tactical decision aid using the interactive multi-dimensional acoustic trainer. Develop Tactics Techniques and Procedures for the employment of Interactive Multi-dimensional Acoustic Trainer (IMAT) as a Tactical Decision Aid (TDA) for defensive and offensive submarine tactics.
- (U) (\$100) Develop a method of employing an AN/SQQ-89 as a tactical training aid. Develop guidance and a tactical decision aid for the tactical employment of the SQQ-89 in littoral waters. Determine the optimum setup of the equipment for the predicated environmental conditions.
- (U) (\$200) Develop tactics for MCM in support of Explosive Ordnance Disposal (EOD) craft. Develop a system for determining the vulnerability of EOD type 3 craft against specific foreign influence mines which have recently been exploited and modeled.
- (U) (\$275) Develop a method of coordinating National and tactical reconnaissance planning. Develop a method for integrating tactical reconnaissance and national reconnaissance information. Provide a planning aid that identifies the strengths and weakness of each system type and provide recommended usage of tactical assets to support Carrier Battle Group/Amphibious Ready Group/Marine Expeditionary Unit (CVBG/ARG/MEU) operations.
- (U) (\$240) Develop a methodology for Underwater Autonomous Vehicle (UAV) usage in support of Strike and Special warfare operations. Develop Tactics, Techniques and Procedures for employing Medium Altitude Endurance Unmanned Aerial Vehicles (MAE UAV) and Tactical UAV to enhance Reconnaissance/Surveillance/Target acquisition (RSTA) battle management and Electronic Combat functions in support of strike warfare and Special Operations Forces. Loss of ES-3 has elevated the requirement for investment in an airborne, tactical electronic surveillance (ES) capability.
- (U) (\$108) Evaluate small craft tactics in the littoral waters. Develop Tactics Techniques and Procedures using multiple weapons systems in dealing with high-speed small boat threat attacks.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROJECT NUMBER: R0151

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation

PROJECT TITLE: Intertype Tactical Development and Evaluation

- (U) (\$ 60) Develop a method of employing tactical oceanographic information. Consolidate cross community guidance and procedures into a single relevant tactical publication that provides a single point reference source in dealing with the littoral environment.
- (U) (\$147) Develop a method of joint employment of the ALQ-99 emissions. Develop Joint Tactics Techniques and Procedures for employment of EA-6B force simulation emissions from AN/ALQ-99 pods to be used as force multipliers and viable C³W/C⁴I deception threats.
- (U) (\$145) Evaluate combined Maritime Patrol Aircraft, ARG/CVG tactics. Will develop a series of tactics for using the modified Maritime Patrol Aircraft (MPA) in support of ARG/MEU Special Operations Command (SOC) operations. Build off of recent lessons learned in support of BDA, MIO, and gunfire missions.
- (U) (\$100) Update/modify/develop Battle Group ASW tactics. Develop and test tactics to optimize CVBG effectiveness in countering specific rest of world diesel submarine attacks in tactically relevant littoral environments.
- (U) (\$102) Coordination of VQ/VPU tactics with a CVBG. Develop coordinated tactics for use of special mission MPA aircraft in support of the CVBG. Due to the retirement of the ES-3, the special mission MPA is being used to support the CVBG. Current tactics do not address this integration.
- (U) (\$285) Develop tactics for electronic attack protection of MCM and MEU forces. Identify and rank current shipboard and airborne systems that support electronic attack in the littoral environment. Develop a methodology in which these systems can support MCM and MEU forces in an escalating hostile littoral environment.
- (U) (\$106) Develop employment tactics for use of the E-2C EMDU. Develop Tactics Techniques and Procedures for employment of the E-2C Mission Computer Upgrade/Advanced Control Indicator Set (MCU/ACIS). Determine system detection and tracking overland performance and mission endurance.
- (U) (\$120) Develop tactics for countering non-acoustic ASW threats. Develop and test new Undersea Warfare methods of countering the growing number of non-acoustic threat sensors in the littoral environment. Evaluate the limitations of current tactics against such threats in the littoral environment.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605155N PROJECT NUMBER: R0151
PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation PROJECT TITLE: Intertype Tactical Development and Evaluation

- (U) (\$125) Develop S-3 depth bomb tactics. Develop Tactics Techniques and Procedures for employment of MK-80 series weapons against shallow water diesel submarine. Project requires research and analysis of existing data on depth bomb performance.
 - (U) (\$ 75) Develop employment tactics for using the Joint Direct Attack Munition from Naval aircraft. Develop carrier air wing strike and target area tactics for interdiction strikes using the increased capabilities of Joint Direct Attack Munition (JDAM) weapons. JDAM IOC is Sep 99.
 - (U) (\$150) Update/modify/develop tactics for combat search and rescue. Develop improved Tactics Techniques and Procedures to support CSAR missions that account for modern aircraft capability against modern threats such as mobile SAMS, Man Portable Air Defense System (MANPADS), etc.
 - (U) (\$206) Develop torpedo selection/employment for 5th Fleet AOR. Similar to project 99-01; develops Tactics Techniques and Procedures for employment of MK-46/48/50 torpedoes against Sango sub using high fidelity, range dependent model for another high interest area of the world. Only light-weight torpedoes currently funded.
 - (U) (\$ 45) Tactical Development and Evaluation.
 - (U) (\$ 57) Program Support.
3. (U) FY 2001 PLAN:
- (U) (\$100) Develop coordinated Air/Mine Inshore Undersea Warfare (MIUW) tactics.
 - (U) (\$250) Continue development of MCM Tactics.
 - (U) (\$ 58) Develop Undersea Warfare (USW) C¹I tactical capabilities.
 - (U) (\$150) Continue development of TACAIR Tactics against Maritime Threats.
 - (U) (\$106) Refine communication electronic attack tactics.
 - (U) (\$150) Continue refinement of strike tactics against land targets.

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DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605155N

PROJECT NUMBER: R0151

PROGRAM ELEMENT TITLE: Fleet Tactical Development and Evaluation
PROJECT TITLE: Intertype Tactical Development and Evaluation

- (U) (\$180) Continue development/evaluation of network centric ASW tactics.
- (U) (\$150) Continue development of surface weapon tactics.
- (U) (\$ 78) Continue development of P-3C synthetic aperture radar tactics.
- (U) (\$265) Continue development of BG tactics against mine threats.
- (U) (\$145) Continue development of MCM sweeping tactics.
- (U) (\$130) Develop coordinated USW tactics with Extended Echo Ranging.
- (U) (\$100) Continue development of tactics for countering non-acoustic ASW threats.
- (U) (\$135) Develop improved electronic warfare tactics in littoral.
- (U) (\$180) Develop improved BG Combat Identification in littoral.
- (U) (\$140) Develop tactics to counter non-military threats and evacuation forces.
- (U) (\$134) Evaluate/improve Aegis employment in T
- (U) (\$135) Continue development of multi-platform MAD search/localization tactics.
- (U) (\$185) Continue development of USW CI tactical capabilities.
- (U) (\$115) Evaluate coordinated Air/MIJW tactics.

(U) PROGRAM CHANGE SUMMARY:

(U) FY 2000 President's Budget:	FY 1999	FY 2000	FY2001
(U) Appropriated Value:	2,739	3,103	2,883
(U) Adjustments from PRESBUFG:		3,103	

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Budget Item Justification
(Exhibit R-2, page 8 of 9)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605155N PROJECT NUMBER: R0151
PROGRAM ELEMENT TITLE: Fleet Tactical Development and Intertype Tactical
and Evaluation PROJECT TITLE: Development and Evaluation

(U) SBIR/STTR Transfer	-37	3
(U) Various Rate Adjustments	-12	
(U) Inflation Adjustments	-1	
(U) Execution Adjustments		
(U) Congressional Rescissions	-17	
(U) FY 2001 PRESUDG SUBMISSION	2,689	3,086
		2,886

(U) Schedule: Not applicable.
(U) Technical: Not applicable.

(U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
(Exhibit R-2, page 9 of 9)

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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605804N PROGRAM ELEMENT TITLE: Technical Information Services

U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
0835 Technical Information Services				952	939	953	991	CONT.	CONT.
923 Federal Laboratory Consortium	959	949							
2296	256	0	0	0	0	0	0	0	972
2322 Acquisition Center of Excellence	8,297	5,700	0	0	0	0	0	0	19,545
total	9,476	6,659	949	952	939	953	991	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Technical Information Services provides support to achieve affordability in the development of Navy systems and reduction of life-cycle costs through the facilitation of advanced technology associations between U.S. industry and the Navy. The goals for project R0835 are met through the following:

- (U) Navy leverage of the industry independent research and development science and technology base by facilitation of voluntary Technical Information Meetings between Navy, DOD components, and the private sector.
- (U) Support for the Navy Acquisition Research and Development Center to provide the private sector with information on navy research and development requirements and advanced acquisition information.
- (U) Transfer of appropriate Navy-developed innovative concepts and inventions to the private sector for purposes of commercialization (Public Law 96-480, Federal Technology Transfer Act of 1986) through Cooperative Research and Development agreements and Patent License Agreements through Offices of Research and Technology Applications.

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Budget Item Justification
(Exhibit R-2, page 1 of 7)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N
PROGRAM ELEMENT TITLE: Technical Information Services

- (U) Promotion of advanced information acquisition and distribution techniques (in conjunction with the Defense Technical Information Center) to disseminate research, development, and technology transfer efforts of Navy components, including the networking of Navy components' technology transfer databases (Scientific and Technical Information Program).
- (U) Support for controlled access to, and exchange of, scientific and technical information by Navy/DOD components and reserent/potential contractors (Navy Potential Contractor Program).

(U) This program also provides the DON interface to the Office of the Deputy UnderSecretary of Defense (Science & echnology), Office of Technology Transition for matters relating to policy and DOD reporting requirements for technology transfer.

(U) The Federal Laboratory Consortium (FLC) for Technology Transfer is an organization of Federal Research and Development laboratories and Centers chartered by the "Stevenson-Wydler Technology Innovation Act of 1980" as amended by Public Law 99-02, the "Federal Technology Transfer Act of 1986." It was established to identify and mobilize the necessary resources to rovide the environment, the organization, and the necessary technology transfer mechanisms required to facilitate the fulles ossible use of federally sponsored R&D results by both public and private sector potential users. Funding of the FLC is a ecurring requirement with the yearly funding level based on an amount equal to eight thousandths of one percent (0.008%) of ach Federal department/agency Research and Development (R&D) budget.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the perations required for general research and development use.

U) PROGRAM CHANGE FOR TOTAL P.E.:

(U) FY 2000 President's Budget:	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Appropriated Value:	5,995	6,696	5,786
(U) SBIR/STTR Transfer:	-	6,696	-
(U) Federal Technology Transfers:	-102	-	-
(U) Execution Adjustment:	256	-	-
	3,354	-	-

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Budget Item Justification
(Exhibit R-2, page 2 of 7)

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FY 2001 RDT&E, N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605804N
PROGRAM ELEMENT TITLE: Technical Information Services

(U) Various Rate Adjustments:	-27	-	-10
(U) Transfer of ACE to OM&N:	-	-	-4827
(U) Congressional Rescissions:	-	-37	-
(U) FY 2001 PRESBDG Submission:	9,476	6,659	949

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

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Budget Item Justification
(Exhibit R-2, page 3 of 7)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

PROGRAM ELEMENT: 0605804N
 PROGRAM ELEMENT TITLE: Technical Information Services

UDGET ACTIVITY: 6

U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
0835 Technical Information Services	923	959	949	952	939	953	991	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides support to achieve affordability in the development of Navy systems and reduction of life-cycle costs through the facilitation of advanced technology associations between U.S. industry and the Navy. These goals are met through the following:

- (U) Navy leverage of the industry independent research and development science and technology base by facilitation of voluntary Technical Information Meetings between Navy, DOD components, and the private sector.
- (U) Support for the Navy Acquisition Research and Development Center (NARDIC) to provide the private sector with information on Navy research and development requirements and advanced acquisition information.
- (U) Transfer of appropriate Navy-developed innovative concepts and inventions to the private sector for purposes of commercialization (Public Law 96-480, Federal Technology Transfer Act of 1986) through Cooperative Research and Development agreements and Patent License Agreements through Offices of Research and Technology Applications.
- (U) Promotion of advanced information acquisition and distribution techniques (in conjunction with the Defense Technical Information Center (DTIC)) to disseminate research, development, and technology transfer efforts of Navy

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Budget Item Justification
(Exhibit R-2, page 4 of 7)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605804N PROJECT NUMBER: R0835
PROGRAM ELEMENT TITLE: Technical Information PROJECT TITLE: Technical Information Services

omponents, including the networking of Navy components' technology transfer databases (Scientific and Technical Information program (STIP)).

- (U) Support for controlled access to, and exchange of, scientific and technical information by Navy/DOD components and reserent/potential contractors (Navy Potential Contractor Program (NPCP)).

- (U) This program also provides the DON interface to the Office of the Deputy UnderSecretary of Defense (Science & echnology), Office of Technology Transition for matters relating to policy and DOD reporting requirements for technology transfer.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) Maintained coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development efforts to meet Navy performance/affordability needs. Encouraged submission of technical data by the private sector to the DTIC database in order to help integrate defense production with the commercial industrial base. SupportedDoD effort to migrate voluntary private sector technical submissions from CD-ROM medium to internet-based exchange. Supported the NARDIC as the primary outreach resource to the private sector, including development and maintenance of open and password-protected electronic bulletin boards residing on the World Wide Web. With Systems Commands, initiated plans for a conference to heighten industry awareness of Navy and Marine Corps Systems Commands technology and development needs to support the Naval short and long term operational requirements. Supported and maintained the networked technology transfer database capability at the laboratory, Office of Naval Research, and DDR&E levels, which enables the tracking of technology transfer efforts. Supported a pilot project to transition Navy patented technology to the private sector. Efforts included effective and economical bacterial cell preservation, enhanced mammography screening, flexible control surfaces to maneuver vehicles and direct fluid flow, and a decontaminate for pesticide cleanup and remediation. In FY 1999, Navy laboratories entered 143 new Cooperative Research & Development Agreements in areas such as the following: network-centric re-engineering for large information technology infrastructures; passive fire protection materials; electromagnetic interference; evaluation of distance learning for security training; space-qualified global positioning system design; and

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Budget Item Justification
(Exhibit R-2, page 5 of 7)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605804N PROJECT NUMBER: R0835
PROGRAM ELEMENT TITLE: Technical Information PROJECT TITLE: Technical Information Services

signal processing for geophysical exploration. Support the Navy Offices of Research and Technology Applications (ORTA) through the National Technology Transfer Center (NTTC) Entrepreneurial Training Apprenticeship Program (ETAP) which provided minority students to work in the ORTA supporting technical information services and technology transfer activities.

2. (U) FY 2000 PLAN:

- (U) Maintain coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development effort to meet Navy performance/affordability needs. Encourage submission of technical data by the private sector to the DTIC database in order to help integrate defense production with the commercial industrial base. Support the NARDIC as the primary outreach resource to the private sector, including maintenance of open and password-protected electronic bulletin boards residing on the World Wide Web. Support a conference to heighten industry awareness of Navy and Marine Corps Systems Commands technology and development needs to support the Naval short and long term operational requirements. With the Naval Science Assistance Program, investigate processes to improve communication of fleet operational problems to commercial industry. Support and maintain the networked technology transfer database capability at the laboratory, ONR, and DoD levels, which enables the tracking of technology transfer efforts. Support the Navy ORTA through the NTTC ETAP, which provides minority students to work in the ORTA supporting technical information services and technology transfer activities.

3. (U) FY 2001 PLAN:

- (U) Maintain Coordination efforts with Systems Commands, Program Executive Offices, Direct Reporting Program Managers, and Navy laboratories and warfare centers to leverage industry research and development effort to meet Navy performance/affordability needs. Encourage submission of technical data by the private sector to the DTIC database in order to help integrate defense production with the commercial industrial base. Support the NARDIC as the primary outreach resource to the private sector, including maintenance of open and password-protected electronic bulletin boards residing on the World Wide Web. Coordinate with the Naval Science Assistance Program to improve communication of fleet operational problems to commercial industry. Support and maintain the networked

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Budget Item Justification
(Exhibit R-2, page 6 of 7)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605804N PROJECT NUMBER: R0835
PROGRAM ELEMENT TITLE: Technical Information PROJECT TITLE: Technical Information Services

technology transfer database capability at the laboratory, ONR, and DoD levels, which enables the tracking of technology transfer efforts. Support the Navy ORTA through the NTTC ETAP, which provides minority students to work in the ORTA supporting technical information services and technology transfer activities.

- . (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- . (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- . (U) RELATED RDT&E: Not applicable.
- . (U) SCHEDULE PROFILE: Not applicable

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Budget Item Justification
(Exhibit R-2, page 7 of 7)

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EXHIBIT R-2 FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605853N
 PROGRAM ELEMENT TITLE: Management, Technical and International Support

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0149 International Cooperative RDT&E									
	1,638	1,976	1,961	2,022	2,033	2,060	2,149	CONT.	CONT.
R1767 Naval War College/Center for Naval Warfare Studies									
	2,641	2,302	2,564	2,603	2,649	2,705	2,760	CONT.	CONT.
X2221 Assessment Program									
	8,513	12,875	13,119	13,323	13,011	13,274	13,557	CONT.	CONT.
X2222 Naval Modeling & Simulation									
	7,740	0	0	0	0	0	0		14,768
W2347 Test and Evaluation Modeling and Simulation									
	0	198	0	0	0	0	0	198	198
TOTAL:	20,532	17,351	17,644	17,948	17,693	18,039	18,466	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This Program Element (PE) provides management and technical support for several national and international projects:

(U) Project R0149 provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs.

(U) Project R1767 provides funding for Naval War College (NWC) research activities, which serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate strategy and campaign alternatives, provide for evaluation through wargaming

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EXHIBIT R-2 FY 2001 RDT&E/N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) Project X2221 provides analytical and management support for the Planning/Assessment process. This project supports the development of annual Integrated Warfare Architectures (IWARS)/Chief of Naval Operations Program Assessment Memorandum (CPAM)/Joint Warfighting Capability assessments which provide the analytical underpinnings and basis for programmatic decisions made by the Navy's top leadership regarding integration of Navy warfare/support requirements.

(U) Project X2222 provides the overarching policy, coordination and technical support for Naval modeling focus, coordination and oversight. It enhances development and execution of a coordinated Naval M&S program, including distributed simulation tool development, M&S incorporation with C4I systems and simulation. This project responds to Congressional guidance to improve modeling and simulation embedded training systems, and an orderly process of model Verification, Validation and Accreditation required by current directives.

(U) Project W2347 This project enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community.) Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

B. (U) PROGRAM CHANGE SUMMARY: FY99 Inflation Savings (-\$80K), LOCO GPSI (-\$71), SBIR (-\$289), CMIS (+\$110), IWARS (+\$867), Program Restoral (+\$2,000K), miscellaneous Departmental adjustments (+\$322K). FY00 changes include Congressional across the Board Reduction (-\$96K) and SSST Competitive adjustments (-\$2,001K), \$285 Portion of extramural program is reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. FY01 changes are miscellaneous Departmental adjustments (-\$45K).

NOTE: PROJECT X2222 TRANSITIONS TO PE 0308601N IN FY2000.

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149
PROJECT TITLE : INTERNATIONAL COOP RDT&E

U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R0149	1,638	1,976	1,961	2,022	2,033	2,060	2,149	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides program management, execution, and support to implement a broad range of cooperative naval research and development (R&D) initiatives with allied and friendly nations. Potential cooperative programs are pursued to fulfill established operational requirements, enhance U.S./allied interoperability and standardization, obtain unique foreign technologies, and reduce U.S. developmental and production costs. Such efforts result in:

- (U) Development and negotiation of approximately 25 International RDT&E Agreements annually with allied and friendly nations.
- (U) Execution of over 300 information exchange annexes.
- (U) Participation in armaments cooperation for a including the Conference of NATO Armaments Directors groups (e.g., the NATO Naval Armaments Group), Senior National Representative (SNR) meetings, the Technical Cooperative Program and Scientific Committee National Representatives meetings.
- (U) Promote research initiatives at the NATO Supreme Allied Command Atlantic, Undersea Research Center (SACLANTCEN) in La Spezia, Italy in the areas of anti-submarine warfare (ASW), mine countermeasures (MCM), and littoral warfare.
- (U) Participation in the Engineering and Scientist Exchange Program (ESEP).

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EXHIBIT R-2A FY 2001 RDT&E/N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149
PROJECT TITLE: INTERNATIONAL
COOP RDT&E

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$307) Continued to support Department of Navy (DoN) participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
- (U) (\$468) Continued to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate Data Exchange Agreements (DEAs) to target new technologies and expand, where appropriate, to include exchanges with Former Soviet Union (FSU) countries.
- (U) (\$519) Continued to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed International Agreements (IAs) for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
- (U) (\$100) Provided support to Acquisition Integrated Product Teams (AIPTs) in evaluating international cooperative alternatives in development of DoN programs as well as support to OSD International Cooperative Opportunity Group (ICOGs) regarding DoN requirements and initiatives.
- (U) (\$16) Maintained a level of Navy participation in the ESEP at approximately three scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$93) Continued to fund the efforts of System Commands (SYSCOMs) and laboratories in researching and negotiating international cooperative programs.
- (U) (\$135) Continued to fund DoN efforts to promote research initiatives at the NATO SACLANTCEN in the areas of ASW, MCM, and littoral warfare.

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EXHIBIT R-2A FY 2001 RDT&E/N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149

PROJECT TITLE: INTERNATIONAL
COOP RDT&E

2. (U) FY 2000 PLAN:
- (U) (\$470) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
 - (U) (\$515) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
 - (U) (\$550) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
 - (U) (\$75) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.
 - (U) (\$291) Increase the level of Navy participation in the ESEP at approximately six scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
 - (U) (\$75) Continue to fund the efforts of SYSCOMs and laboratories in researching and negotiating international cooperative programs.
3. (U) FY 2001 PLAN:
- (U) (\$500) Continue to support DoN participation at SNR Conferences with allies for harmonization of requirements and identification of potential collaborative R&D projects.
 - (U) (\$525) Continue to support DoN participation in U.S./allied data exchange conferences to identify foreign technologies and R&D projects in which the Navy may desire to collaborate as well as on-going efforts to initiate/revise/terminate DEAs to target new technologies and expand, where appropriate, to include exchanges with FSU countries.
 - (U) (\$600) Continue to update and maintain the DoN data bases for drafting, negotiating, managing and tracking of proposed IAs for "high leverage/high payoff" R&D technology base cooperative projects with key allies and friendly nations.
 - (U) (\$75) Provide support to Acquisition IPTs in evaluating international cooperative alternatives in development of DON programs as well as support to OSD ICOGs regarding DON requirements and initiatives.

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R0149
PROJECT TITLE : INTERNATIONAL
COOP RDT&E

- (U) (\$186) Maintain a level of Navy participation in the ESEPP at approximately six scientists/engineers. Continue to conduct post-assignment analysis of scientists/engineers to better target assignments with emerging technologies and programs at foreign research establishments.
- (U) (\$75) Continue to fund the efforts of SYSCOMs and laboratories in researching and negotiating international cooperative programs.

B. (U) Other Program Funding Summary

(U) RELATED RDT&E:

(U) P.E. 0603790D (Nunn Armaments Cooperation)

(U) P.E. 0605130D (Foreign Comparative Testing)

(U) P.E. 0603790N (NATO Cooperative Research and Development)

C. (U) Acquisition Strategy: Not Applicable

D. (U) Schedule Profile: Not Applicable

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EXHIBIT R-2A FY 2001 RDT&E-N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
 PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R1767
 PROJECT TITLE NWC Strategic Studies Spt

(U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
R1767 Naval War College/Center for Naval Warfare Studies	2,641	2,302	2,564	2,603	2,649	2,705	2,760	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Naval War College (NWC) research activities serve as a focal point, stimulus, and major source of strategic and campaign thought within the Navy. These efforts generate strategy and campaign alternatives, provide for evaluation through wargaming methodologies, and provide recommendations to the Chief of Naval Operations (CNO) and fleet commanders regarding the formulation and execution of strategy.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$1,683) Conducted strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$871) Conducted major war games culminating in Global '99.
- (U) (\$87) Provided for selected NWC students to conduct advanced research projects.

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EXHIBIT R-2A FY 2001 RDT&E N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605653N
PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: R1767
PROJECT TITLE NWC Strategic Studies Spt

(U) FY 2000 PLAN:

- (U) (\$1,611) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$627) Conduct major wargames culminating in Global '99.
- (U) (\$64) Provide for selected NWC students to conduct advanced research projects.

(U) FY 2001 PLAN:

- (U) (\$1,629) Conduct strategic studies in response to SECNAV, CNO, UNIFIED, and Fleet CINC tasking in such areas as maritime strategy, decision support, and direct fleet support.
- (U) (\$819) Conduct major wargames culminating in annual Global Wargame, including maintenance of legacy Enhanced Naval Wargaming System and preparation for implementation of successor Joint Simulation System-Maritime.
- (U) (\$116) Provide for selected NWC students to conduct advanced research projects, including expanded opportunities for advanced research under the Mahan Scholars program.

- B. (U) Other Program Funding Summary: Not Applicable
- C. (U) Acquisition Strategy: Not Applicable
- D. (U) Schedule Profile: Not Applicable

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
 PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221
 PROJECT TITLE: Assessment Program

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2221 Assessment Program	8,513	12,875	13,119	13,323	13,011	13,274	13,557	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: X2221, Assessment Program provides analytical and management support to the Planning segment of the Navy Planning, Programming and Budgeting System (PPBS). This project supports the development of annual Integrated Warfare Architectures (IWARs) and Chief of Naval Operations Program Analysis Memoranda (CPAM) assessments, which provide analytical underpinnings/basis for programmatic decisions of the Navy's top leadership regarding the integration of all Navy warfare and support requirements. This program provides the Navy input to the Vice Chairman Joint Chiefs of Staff (VCJCS) led Joint Warfighting Capability Assessment (JWCA) process. Assessment program develops tools and analytical methodologies that assist in evaluating Navy programs and provides technical leadership for the analysis functional area of Naval Modeling and Simulation.

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EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221
PROJECT TITLE: Assessment Program

(U) PROGRAM ACCOMPLISHMENTS:

1. (U) FY 1999 ACCOMPLISHMENTS

- (U) (\$ 111) Developed, updated and maintained detailed level Navy Standard scenarios based on Defense Planning Guidance.
- (U) (\$ 110) Development of Congressional Information Management Systems (CIMS) which will track Congressional actions requested of the Department of the Navy.
- (U) (\$6,156) Developed Integrated Warfare Architectures (IWARs) and performed assessments and develop the Chief of Naval Operations Program Analysis Memoranda (CPAM). Areas of focus included; Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower and Personnel; Training and Education; Power Projection; Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provided Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
- (U) (\$1,278) Continued to develop and accredit IWAR and CPAM - tools and improve analytic methodology.
- (U) (\$858) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools for the assessment process. Developed new tools that utilize models in the standard simulation and database architecture. Coordinated/supported Joint Analytical Model Improvement Program (JAMIP).

2. (U) FY 2000 PLAN:

- (U) (\$ 213) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.

UNCLASSIFIED

EXHIBIT R-2A FY 2001 RDT&E,N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221
PROJECT TITLE: Assessment Program

- (U) (\$8,981) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Assessment Memorandum (CPAM). Areas of focus include Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
 - (U) (\$2,016) Continue to develop and accredit IWAR and CPAM tools and improve analytic methodology.
 - (U) (\$1,665) Using the standard simulation and database architecture developed by Naval Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).
3. (U) FY 2001 PLAN:
- (U) (\$212) Develop, update and maintain detailed level Navy Standard scenarios based on Defense Planning Guidance.
 - (U) (\$9,153) Develop Integrated Warfare Architectures (IWARs) and perform assessments and develop the Chief of Naval Operations Program Analysis Memoranda (CPAM). Areas of focus include Air Dominance; Deterrence; Force Structure; Infrastructure; Manpower and Personnel; Training and Education; Power Projection; Readiness; Sea Dominance; Sensor Management/Information Superiority; Sustainment; Technology. Provide Navy input to Joint Warfighting Capabilities Assessment (JWCA) process.
 - (U) (\$2,062) Continue to develop and accredit IWAR and CPAM tool and improve analytic methodology.

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EXHIBIT R-2A FY 2001 RDT&E-N PROJECT JUSTIFICATION

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
PROGRAM ELEMENT TITLE: Management, Technical and International Support

PROJECT NUMBER: X2221
PROJECT TITLE: Assessment Program

- (U) (\$1,692) Using the standard simulation and database architecture developed by Navy Modeling and Simulation to re-host legacy models into the new framework, vastly improving the utility of these tools to the assessment process. Develop new tools that utilize models in the standard simulation and database architecture. Coordinate/support Joint Analytical Model Improvement Program (JAMIP).
- B. (U) Other Program Funding Summary: Not Applicable
- C. (U) Acquisition Strategy: Not Applicable
- D. (U) Schedule Profile: Not Applicable

UNCLASSIFIED

EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

DATE: FEB 2000
 PROJECT NUMBER X2222
 PROJECT TITLE: Navy Model & Simulation

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605853N
 PROGRAM ELEMENT TITLE: Management, Technical & International Support

(U) COST (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
X2222 Naval Modeling & Simulation	7,740	0	0	0	0	0	0		14,768

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Funds the efforts of Navy Modeling and Simulation (M&S) Management Office and the Department of the Navy Technical Support Group (TSG). Supports technical and management initiatives directed by Congress, DoD and SECNAV with the aim of bringing organization and focus to the development and use of M&S tools throughout Navy and DoD. It provides a central agency for the formulation and implementation of policy and guidance in M&S; represents Navy interests in Joint/other Agency. Funds efforts to define and coordinate execution of a Navy M&S program to evolve an interoperable and reusable core M&S capability consistent with the M&S technical framework prescribed by DoD. Effective FY98, efforts were organized around 4 product areas: (1) Engineering Studies and Analysis, to define the feasibility and applicability of proposed standards to Navy and to investigate service unique requirements for standards or guidance; (2) Products and Services, to develop the policy, standards, and common tools and services necessary to guide more efficient development and use of M&S across Navy; this includes development and management of the Navy M&S Information System (NMSIS), Navy counterpart to the DOD M&S Resource Repository, to provide a central M&S information resource to reduce stovepiped development, promote tool reuse and support informed M&S investment decisions; (3) M&S Quality Assurance Program, to establish and manage a disciplined process of model verification, validation and accreditation (VV&A) required by current directives; (4) Simulation Experiments, to test distributive simulation technology in fleet exercises, experiments, and pilot efforts which demonstrate and examine the value and limitations of proposed standards (such as High Level Architecture (HLA) and Joint Modeling and Simulation Systems (JMASS)) to mission and program requirements.

Note: In FY 2000 a Technical Change moves the Naval Modeling and Simulation X2222 Project from Program Element 0605853N to Program Element 0308601N in order to more accurately describe the Naval Modeling and Simulation Project.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

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EXHIBIT R-2A FY 2001 RDT&E PROJECT JUSTIFICATION

DATE: FEB 2000

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER X2222
PROJECT TITLE: Navy Model &
Simulation

PROGRAM ELEMENT TITLE: Management, Technical & International Support

BUDGET ACTIVITY: 6

1. FY 1999 ACCOMPLISHMENTS

- (U) (\$1,373) Engineering Studies and Analysis: Developed and implemented the Navy strategy for the transition of Navy M&S to the OSD-mandated M&S interoperability standard, High Level Architecture (HLA). Led Navy HLA implementation planning, reported Navy compliance intentions to DoD and participated in the DoD HLA transition working group. Briefed Navy flags, intra and inter service forums on the issues and technical implications of Navy M&S compliance with HLA. Performed a set of study tasks that focused on the assessment of the adequacy of the Run Time Infrastructure (RTI) of the HLA. Developed a scriptable HLA test bed to provide the Navy with an independent method for evaluation of the HLA/RTI. Developed a set of attributes for designing modeling standards of communication networks and information systems. This was done in collaboration with the J6 Network Warfare Simulation (NETWARS) standards working group. Performed analysis of current operational communications infrastructure and derived a method to extract, process and archive information to support operational analysis capabilities through modeling and simulation. Developed an initial roadmap for migrating existing standalone training modeling capability into a more integrated, interoperable core suite of capability tailored to the Navy training requirements. The training study is directly applicable to the development of the M&S Investment Plan. Initiated and established a Modeling and Simulation degree program at the Naval Postgraduate School, Modeling, Virtual Environments and Simulation (MOVES) curriculum.
- (U) (\$2,427) Products and Services: Developed and provided an initial operational implementation of the web-based Navy Modeling and Simulation Information System (NMSIS), the Naval component of the DoD M&S resource repository (part of the DoD M&S Framework). Updated and provided user assistance and support on the Naval M&S Catalog; added HLA and Y2K compliance information for Navy systems. Supported planning and technical coordination of efforts across Navy M&S Functional Areas, other Services, OSD, Joint Staff, and other agencies to develop policies and procedures for M&S standardization. Coordinated and chaired Navy's M&S Working Group and Navy Flag M&S Steering Group; participated in the Defense M&S Office's M&S working group and the DoD M&S Executive Council, including separate forums for training, assessments acquisition; and coordination of technical reviews of joint programs and initiatives (JSIMS, JWARS, JWASS and NETWARS). Participated in select OSD and industry sponsored symposia. Developed draft of DoD and SECNAV-required Navy M&S Investment Plan and developed and coordinated final review and approval of SECNAV Instruction for Navy M&S VV&A.

R-1 Shopping List - Item No 141-14 of 141-19

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDT&E PROJECT JUSTIFICATION

DATE: FEB 2000

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER X2222
PROJECT TITLE: Navy Model &
Simulation

PROGRAM ELEMENT TITLE: Management, Technical & International Support
Simulation

BUDGET ACTIVITY: 6

• (U) (\$800) M&S Quality Assurance Program: Continued to implement and manage the M&S Quality Assurance development of the Verification, Validation, and Accreditation (VV&A) process and guidelines for modeling, simulation, and data. Provided technical review on M&S VV&A plans and reports and provided subject matter expertise and advice on how to meet Navy policy requirements within existing fiscal and programmatic constraints. Develop and implemented an initial version of a web-based VV&A Handbook aimed at supporting program managers across the Navy. Establish and implement a VV&A training curriculum for developers and accreditors. Provide annual VV&A assessment to the CNO.

• (U) (\$3,140) Simulation Experiments: Provided Navy share of Services' contribution to maintenance of the simulation protocol needed to use Joint Training Confederation simulations in Joint Task Force Exercises. Ensured simulation of Naval forces and supported Navy participation in Joint exercises; supported Ulchi Focus Lens, Synthetic Theater of War, and United Endeavor. Identified initial suite of existing M&S tools to offer near term relevance and application to the goals of the Maritime Battle Center (MBC) and the ongoing evaluation of systems and technologies in reoccurring Fleet Battle Experiments (FBE). Initiated development of a Virtual Missile Range to support training needs of the Third Fleet. Provided M&S support to the Focused Logistics Wargame for the purpose of determining the adequacy of logistics in support of Peacetime Presence Operation, Multiple Military Operations Other Than War (MOOTW), Small-Scale Contingency (SSC), and Major Theater War scenarios. Initiated development of a seamless, integrated, physically consistent, ocean environment representation. Initiated Phase II of Maritime Virtual Environmental Data Specification (MARVEDS), initial analysis and feasibility of approach to developing an Information model, data format, data dictionary, algorithms, techniques, and database management system that can define and mediate the environmental data required to enable a virtual prototype. This type of standard for simulation environments is critical to enabling Simulation Based Acquisition (SBA). Participated in OSD effort to develop a definition, functional description, and implementation plan for simulation-based acquisition.

(U) FY 2000 PLAN: See PE0308601N

B. (U) Other Program Funding Summary:

O&M,N PE0204662N/1CLC (Partial)
FY 99
725

R-1 Shopping List - Item No 141-15 of 141-19

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Exhibit R-2A RDT&E Project Justification

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EXHIBIT R-2A FY 2001 RDTE,N PROJECT JUSTIFICATION

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N
PROGRAM ELEMENT TITLE: Management, Technical & International Support

DATE: FEB 2000
PROJECT NUMBER X2222
PROJECT TITLE: Navy Model & Simulation

- C. (U) Acquisition Strategy: Not Applicable
- D. (U) Schedule Profile: Not Applicable

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EXHIBIT R-2A, RDT&E, N Project Justification

DATE FEB 2000

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER W2347
PROJECT TITLE: Test Evaluation Modeling & Simulation

PROGRAM ELEMENT TITLE: Management, Technical & International Support

BUDGET ACTIVITY: 6

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
W2347 Test and Evaluation Modeling and Simulation	0	198	0	0	0	0	0	198	198

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project funding has been reduced based on higher Navy reprioritization requirements in FY2001 and out years. This project enhances the Test and Evaluation (T&E) efforts of the Navy by providing policy, coordination, and technical support for the Modeling and Simulation (M&S) program. The mission is to promote and standardize modeling and simulation for interoperability and re-use within and between programs and across the Research Development Test and Evaluation community. This also provides funds to incrementally establish the Joint Synthetic Test and Evaluation Battlespace (JSTEB) Joint Operational Requirements document. Test and Evaluation Modeling and Simulation (TEMS) is required to reduce the cost, schedule, and risk of acquisition programs by supporting the early integration of M&S capabilities into the T&E process.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: Budget Activity 6: This program is funded under Research, Development Test and Evaluation management support because it supports the operations and installations required for general research and development.

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EXHIBIT R-2A, RDT&E,N Project Justification

DATE FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605853N

PROJECT NUMBER W2347
PROJECT TITLE: Test Evaluation Modeling & Simulation

PROGRAM ELEMENT TITLE: Management, Technical & International Support

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 2000 PLAN:

- (U) (\$198) Provide minimum technical support to the Navy acquisition community using T&E modeling and simulation resources.

(U) B.. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

Related RDT&E

(U) P.E. 0604759N: Major T&E Investment

(U) P.E. 0605864N: Test and Evaluation Support

(U) C. ACQUISITION STRATEGY: Not Applicable

(U) D. SCHEDULE PROFILE: Not Applicable

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BUDGET ACTIVITY: 6 EXHIBIT R-3, FY2001 RDT&E Cost Analysis DATE: FEB 2000
 PROGRAM ELEMENT: 0605853N PROJECT NUMBER W2347
 PROGRAM ELEMENT TITLE: Management, Technical & International Support PROJECT TITLE: Test Evaluation Modeling & Simulation

Contract	Performing	Total	FY 1999	FY 2000	FY 2001	Target			Value of Contract
						Activity & Location	Prior Yrs	Cost	

Subtotal Project Development WX NAWCAD, Patuxent River, MD 0 0 198 10/99 198 198

Remarks: Not Applicable

Subtotal Support

Remarks: Not Applicable

Subtotal Test & Evaluation:

Remarks: Not Applicable

Project Management

Subtotal Management:

Remarks: Not Applicable

Total Cost

0 0 198 10/99 198 198

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N
 (U) COST: (Dollars in Thousands) PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
0135 ONR Science and Technology Management	51,744	48,098	49,218	50,406	51,565	52,563	55,154	CONT.	CONT.
0137 ONR S&T Instrumentation Modernization	4,224	1,218	1,257	1,280	1,298	1,313	1,366	CONT.	CONT.
2353 DFAS Billings	7,801	3,435	2,905	3,750	3,900	4,100	4,300	CONT.	CONT.
TOTAL	63,769	52,751	53,380	55,436	56,763	57,976	60,820	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element covers Office of Naval Research (ONR) expenses including salaries, utilities, printing, supplies, materials, information technology (IT), general support equipment and other day-to-day costs. The vast majority of these items represent fixed costs associated with scientists and engineer supporting the Navy's Science and Technology Program. The Defense Finance and Accounting Service (DFAS) Billing project provides funds for accounting services provided to Research and Development (R&D) activities.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

(U) PROGRAM CHANGE FOR TOTAL P.E.:

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Budget Item Justification
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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	59,868	52,777	57,581
- Appropriated Value:		52,777	
- Execution Adjustments	4,205		
- Minor Program Adjustments			196
- Congressional Recission		26	
- Various Rate Adjustments	269		99
- SBIR/STTR Transfer	35		
- Reduction to R&D DFAS			3,861
- Strategic Sourcing Adjustment			243
FY 2001 President's Budget Submission:	63,769	52,751	53,380

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Budget Item Justification
(Exhibit R-2, page 2 of 9)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

U) (COST): (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL PROGRAM
0135 ONR Science and Technology Management	51,744	48,098	49,218	50,406	51,565	52,563	55,154	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project supports Office of Naval Research (ONR) leadership, management and direction for the Naval Science and Technology program. This project funds salaries, utilities, supplies, and their fixed costs at ONR Headquarters and field offices. ONR sponsors scientific advances which lead to future Naval capabilities, supporting the fleet's ability to operate from a position of technological superiority. Functions performed include (1) scientific and technical direction of the nationwide Category 6.1 basic research program with colleges, universities, non-profits and Navy laboratories and warfare centers and industry; (2) scientific and technical direction of the 6.2 applied research program through the Naval R&D laboratories and warfare centers and industry; (3) scientific and technical direction of the Naval advanced technology development program (Category 6.3) through the Navy's R&D laboratories, warfare centers and industry; (4) management, resource formulation, program assessment, and contract negotiation/administration of the Navy basic research, applied research and advanced technology development program; (5) program management and support to selected research programs of Ballistic Missile Defense Organization (BMDO) and Defense Advanced Research Projects Agency (DARPA); an 6) coordination of the Navy's Technology Base program within the context of total DoD/Government (e.g., National Science Foundation, National Academy of Sciences) R&D initiatives in order to maximize scientific advances. This project also supports ONR management and direction for the following Navy-wide programs: Small Business Innovation Research (SBIR), Navy Research Advisory Committee, Navy Patent Program, Navy Historically Black Colleges and Universities Program, Navy Manufacturing Technology Program and the SSBN Survivability Program. In addition, this program supports ONR's Navy-wide responsibilities in the negotiation and establishment of indirect cost rates for DoD-assigned universities and performance of contract administration for all DoD contacts/grants at all colleges and universities

(U) PROGRAM ACCOMPLISHMENTS AND PLANS

1. (U) FY 1999 ACCOMPLISHMENTS:

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Budget Item Justification
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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology Management

PROJECT NUMBER: R0135

PROJECT TITLE: ONR Science & Technology Management

- (U) The project provided for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, rent, communications, etc. The project continued to provide support for the ONR headquarters and field offices. Specifically, it paid the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provided important management and administrative support to BMDO and DARPA.
- 2. (U) FY 2000 PLAN:
 - (U) The project continues to provide for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, communications, etc. The project continues to provide support for the ONR headquarters and field offices. Specifically, it pays the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provides important management and administrative support to BMDO and DARPA.
- 3. (U) FY 2001 PLAN:
 - (U) The project continues to provide for basic costs of the ONR headquarters and its field activities in support of the entire Navy Science and Technology program. Almost all the funds in this project are fixed costs, such as salaries, communications, etc. The project continues to provide support for the ONR headquarters and field offices. Specifically, it pays the salaries of scientific and engineering personnel who direct the execution of the Navy's basic research (Category 6.1), applied research (Category 6.2), and advanced technology development (Category 6.3) programs at the nation's universities/colleges, Navy laboratories and warfare centers, and private industry. In addition to its Navy Science and Technology mission, ONR provides important management and administrative support to BMDO and DARPA.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N PROJECT NUMBER: R0135

PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology Management PROJECT TITLE: ONR Science & Technology Management

- . (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- . (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable.
 - (U) Related RDT&E: Not applicable.
 - (U) SCHEDULE PROFILE: Not applicable.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science & Technology Management

U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL PROGRAM
0137 ONR S&T Instrumentation Modernization	4,224	1,218	1,257	1,280	1,298	1,313	1,366	CONT.	CONT.

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project purchases information technology (IT) and general support equipment for the Office of Naval Research (ONR) headquarters and field offices.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) Purchased IT and general support equipment for ONR headquarters and field offices.
2. (U) FY 2000 PLAN:
 - (U) Purchase IT and general support equipment for ONR headquarters and field offices.
 - (U) FY 2001 PLAN:
 - (U) Purchase IT and general support equipment for ONR headquarters and field offices.
- (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- (U) Related RDT&E: Not applicable.

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Budget Item Justification
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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N PROJECT NUMBER: R0137

PROGRAM ELEMENT TITLE: RDT&E,N Instrumentation PROJECT TITLE: ONR S&T Instrumentation

Modernization Modernization

. (U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605861N

PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL PROGRAM
2353 DFAS Billings	7,801	3,435	2,905	3,750	3,900	4,100	4,300	CONT.	CONT.

(U) COST: (Dollars in Thousands)

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funding for accounting services provided t
esearch and Development (R&D) activities by the Defense Finance and Accounting Service (DFAS).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) Funded DFAS bill for transactions processed in support of Department of the Navy R&D activities. Specific services included pay, transportation, commercial invoices, travel, and the maintenance of trial balances.
2. (U) FY 2000 PLAN:
 - (U) Funds DFAS bill for transactions processed in support of Department of the Navy R&D activities. Specific services include pay, transportation, commercial invoices, travel, and the maintenance of trial balances.
3. (U) FY 2001 PLAN:
 - (U) Funds DFAS bill for transactions processed in support of Department of the Navy R&D activities. Specific services include pay, transportation, commercial invoices, travel, and the maintenance of trial balances.

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605861N PROJECT NUMBER: R2353
PROGRAM ELEMENT TITLE: RDT&E,N Science and Technology Management PROJECT TITLE: DFAS Billings

- . (U) PROGRAM CHANGE SUMMARY: See total program change summary for P.E.
- . (U) OTHER PROGRAM FUNDING SUMMARY: Not Applicable.
- . (U) Related RDT&E: Not applicable.
- . (U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
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DATE: February 2000

FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROJECT NUMBER: M0104

PROGRAM ELEMENT TITLE: RDT&E Medical Science and Technology Management and Instrumentation Modernization

PROJECT TITLE: RDT&E Medical Science and Technology Management and Instrumentation Modernization

(U) COST: (Dollars in Thousands)

PROJECT NUMBER & TITLE	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
M0104 RDT&E Medical Science and Technology Management and Instrumentation Modernization	8,637	9,258	12,045	9,827	10,313	10,964	11,655		

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element includes RDT&E funds for operating and miscellaneous support costs at RDT&E laboratories and other installations, facility and civilian personnel costs not directly chargeable to RDT&E projects. Also includes RDT&E funds for RDT&E laboratories and facilities for research, support, equipment, minor construction and other investment and materiel support costs not directly chargeable to RDT&E projects. Excludes military manpower and related costs, non-RDT&E base operating costs, and military construction costs which are included in other appropriate programs.

(U) PROGRAM ACCOMPLISHMENT AND PLA NS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$8,637) Provided operating and miscellaneous support costs at BUMED and its research laboratories. Support included (\$133.4) for Architectural and Engineering Design, (\$145.9) for Construction Projects, and (\$8,357.7) for operating and support costs.
2. (U) FY 2000 PLAN:
 - (U) (\$9,258) Continue to provide operating and miscellaneous support costs at BUMED and its research laboratories. Continue to provide support for technologically advanced cutting edge research equipment for research and data acquisition, automated sampling and real time statistical analysis of biomedical research data utilizing data information systems integral with new equipment. Continue to provide replacement of obsolescent research equipment. Continue to provide support to physical facility areas needing major repair, minor construction, rehabilitation to meet mission requirements as well as meeting environmental compliance and pollution standards.

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FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: February 2000
 BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N PROJECT NUMBER: M0104
 PROGRAM ELEMENT TITLE: RDT&E Medical Science and Technology Management and Instrumentation Modernization PROJECT TITLE: RDT&E Medical Science and Technology Management and Instrumentation Modernization

3. (U) FY 2001 PLAN:

- (U) (\$12,045) Continue to provide operating and miscellaneous support costs at BUMED and its research laboratories. Continue to provide support for technologically advanced equipment for research and data acquisition, automated sampling and real time statistical analysis of biomedical research data utilizing data information systems integral with new equipment. Continue to provide replacement of obsolescent research equipment. Continue to provide support to physical facility areas needing major repairs, replacement, minor construction, rehabilitation to meet mission requirements and environmental compliance and pollution standards.

B. (U) PROGRAM CHANGE SUMMARY:

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
(U) President's Budget:	0	9,258	10,487	11,116	12,308	12,712	13,114
(U) Adjustments from FY 1999 PRESBUDG:	8,637	0	1,558	-1,289	-1,995	-1,748	-1,459
(U) FY 2000 / 2001 President's Submission	8,637	9,258	12,045	9,827	10,313	10,964	11,655

(U) CHANGE SUMMARY EXPLANATION:

(U) Funding:

- (U) FY 1999: increase of (8,483) for ONR Comparability adjustment; decrease of (-38) for Inflation; increase of (193) for BSO 1002 Actual Update; decrease of (-1) for FY 1999 BTRs.
- (U) FY 2000: no change.
- (U) FY 2001: decrease of (-800) for R&D Program 6.6 Program Reduction; increase of (2,221) for Naval Medical Research Unit No. 3, Cairo; increase of (1) for Fuel Prices: MOGAS Ledged; increase of (1) for Fuel Prices: MOGAS Unleaded; increase of (7) for Fuel Prices: Diesel; increase of (2) for MOGAS: Ledged; increase of (6) for MOGAS: Unleaded; increase of (69) for Diesel; increase of (51) for Mil/Civ Pay Rates.
- (U) FY 2002: decrease of (-848) for R&D Program 6.6 Program Reduction; decrease of (-560) for Naval Medical Research Unit No. 3, Cairo; increase of (1) for Fuel Prices: MOGAS Ledged; increase of (1) for Fuel Prices: MOGAS Unleaded; increase of (7) for Fuel Prices: Diesel; increase of (2) for MOGAS: Ledged; increase of (5) for MOGAS: Unleaded; increase of (53) for Diesel; increase of (50) for Mil/Civ Pay Rates.

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DATE: February 2000

FY 2000 / 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605862N

PROJECT NUMBER: M0104

PROGRAM ELEMENT TITLE: RDT&E Medical Science and
Technology Management and
Instrumentation Modernization

PROJECT TITLE: RDT&E Medical Science and
Technology Management and
Instrumentation Modernization

- (U) FY 2003: decrease of (-1,424) for R&D Program 6.6 Program Reduction; decrease of (-560) for Naval Medical Research Unit No. 3, Cairo; increase of (1) for Fuel Prices: MOGAS Leaded; increase of (1) for Fuel Prices: MOGAS Unleaded; increase of (7) for Fuel Prices: Diesel; increase of (1) for MOGAS: Leaded; increase of (3) for MOGAS: Unleaded; increase of (28) for Diesel; decrease of (-52) for Mil/Civ Pay Rates.
- (U) FY 2004: decrease of (-1,175) for R&D Program 6.6 Program Reduction; decrease of (-560) for Naval Medical Research Unit No. 3, Cairo; increase of (1) for Fuel Prices: MOGAS Leaded; increase of (1) for Fuel Prices: MOGAS Unleaded; increase of (7) for Fuel Prices: Diesel; increase of (1) for MOGAS: Leaded; increase of (3) for MOGAS: Unleaded; increase of (28) for Diesel; decrease of (-54) for Mil/Civ Pay Rates.
- (U) FY 2005: decrease of (-884) for R&D Program 6.6 Program Reduction; decrease of (-560) for Naval Medical Research Unit No. 3, Cairo; increase of (1) for Fuel Prices: MOGAS Leaded; increase of (1) for Fuel Prices: MOGAS Unleaded; increase of (7) for Fuel Prices: Diesel; increase of (1) for MOGAS: Leaded; increase of (3) for MOGAS: Unleaded; increase of (28) for Diesel; decrease of (-56) for Mil/Civ Pay Rates.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E:

(U) Program Element 0605861N, RDT&E, N Science and Technology Management and Navy Medical Research and Development Programs. Beginning FY 2000, realign PE 0605861N for S & T.

D. (U) SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-2, FY 2001 RDT&EN BUDGET ITEM JUSTIFICATION SHEETS

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N**
PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
S0354 RDT&E Ships Support	12,048	15,884	15,748	13,096	13,369	13,504	14,085	CONT.	CONT.
W0568 RDT&E Aircraft Flight Hours	27,906	28,364	29,028	30,625	31,123	31,471	33,254	CONT.	CONT.
W0569 RDT&E Aircraft Support	34,009	28,523	31,352	28,462	29,888	34,412	35,719	CONT.	CONT.
TOTAL	73,963	72,771	76,128	72,183	74,380	79,387	83,058	CONT.	CONT.

Quantity of RDT&E Articles

Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing program provides support for ships and platforms required to accommodate Research, Development, Test and Evaluation (RDT&E) of new systems. The RDT&E ship and aircraft inventory is required to adequately test new and improved weapon systems, stay current with threats, and increase warfighting capability of the fleet. The program provides integrated logistics support for aircraft at selected field activities; provides depot-level rework of aircraft, engines, and components for the Navy inventory of RDT&E aircraft; and provides support for ships and aircraft bailed to contractors for Navy RDT&E projects. Costs covered under this element include aircrew training and proficiency, fuel, supplies, equipment, modification, repair, Aviation Depot Level Repairables, Special Flight Test Instrumentation Pool equipment, overhaul of ships and aircraft, as well as organizational, intermediate, and depot maintenance of ships and aircraft in the Navy RDT&E inventory.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

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Exhibit R-2, RDT&E Budget Item Justification
 (Exhibit R-2, Page 1 of 16)

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: S0354**
PROGRAM ELEMENT TITLE: RDT&E Ship & Aircraft Support **PROJECT TITLE: RDT&E Ship Support**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actuals</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
S0354 RDT&E Ship Support		15,884	15,748	13,096	13,369	13,504	14,085	CONT.	CONT.
TOTAL	12,048	15,884	15,748	13,096	13,369	13,504	14,085	CONT.	CONT.

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) S0354, RDT&E Ships Support. This project provides for operation and maintenance of platforms used as Sea Based Test Sites in support of the Navy Research, Development, Test, and Evaluation (RDT&E) program. These are the USS DOLPHIN (AGSS-555) and the Self-Defense Test Ship (SDTS). Testing aboard these platforms reduces the number of fleet units required to support RDT&E efforts. In the case of the SDTS, it provides the capability of testing self-defense weapons systems to within their minimum ranges. A major cost of this project is regularly scheduled ship maintenance. The remainder of the funds are used for purchase of supplies and equipment, fuel and petroleum products, repairs, and supporting modifications. Most costs are fixed and are associated with simply having these platforms in the inventory. A lesser portion of the costs varies with the tempo and type of ship operations and provides for systems improvements and replacement planning. The nature of the operation is determined by the overall Navy/DoD R&D testing program.

(U) USS DOLPHIN will support software upgrades testing of the MK 50 and MK 48 ADCAP torpedoes, the NSSL Material Qualification Program, ONR Littoral Warfare Advanced Development (LWAD) Program, Improved Extended Echo Ranging (IEER), Advanced Extended Echo Ranging (AEER), Advanced Deployable System (ADS), Submarine Mast Detection Radar (SMDR). Laser Airborne System - Hyperspectral (LASH), Airborne Low Frequency Sonar (ALFS), Tripartied Technology Cooperation Program (TTCP) and the Advanced Sea/Air/Land (SEAL) Delivery Program. Mobile Inshore Warfare Unit Arrays and the Sea-based Weapons and Tactics School (SWATS) are also frequently supported by USS DOLPHIN. USS DOLPHIN provides support for numerous undersea surveillance, sonar, weapons, communications and imaging programs.

(U) The current and projected Anti-Ship Cruise Missile (ASCM) threats require self-defense weapons systems capable of adequately countering ASCMs into the year 2000 and beyond. The National Defense Authorizations Act for FY87, section 910, "Testing of Certain Weapons Systems and Munitions," requires live-fire lethality testing of manned weapons systems. Operational and safety constraints limit realistic live-fire lethality testing with U.S. Navy ships and thus drive the requirement for having an afloat, unmanned, remotely controlled SDTS. SDTS plans call for testing PHALANX, High Frequency Surface Wave Radar Advanced Technology Demonstration (ATD), the Rolling Airframe Missile (RAM) and future short range Anti-Air Warfare systems against realistic threat presentation in an at-sea environment.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605863N PROJECT NUMBER: S0354
PROGRAM ELEMENT TITLE: RDT&E Ship & Aircraft Support PROJECT TITLE: RDT&E Ship Support

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$10,001) USS DOLPHIN completed RAV 2-5 in first quarter FY 1999. USS DOLPHIN ONR Littoral Warfare Advanced Development (LWAD) Program, Improved Extended Echo Ranging (IEER), Advanced Extended Echo Ranging (AEER), Airborne Low Frequency Sonar (ALFS), and Tripartied Technology Cooperation Program (TTCP) at sea testing. USS DOLPHIN extensively supported the DT&E and OT&E events for the ADS and supported ONR weapons development in Broadband Torpedo. USS DOLPHIN continued to support near ocean bottom operations, torpedo exercises, fleet exercises and RDT&E programs modeling sonar propagation, testing sensors and communication systems. USS DOLPHIN conducted periodic phased maintenance to maintain certification and procured material to support continued operations.

- (U) (\$2,047) Ex-DECATUR/SDTS conducted live fire operations at NAVAIRWARCENWPNDIV Point Mugu, CA. Live fire testing planned included the ESSM DT&E and OT&E RAM OT&E and High Frequency Surface Wave Radar ATD. NAVSURFWARCENDIV Port Hueneme, CA, planned, scheduled, and performed combat systems operations and maintenance onboard SDTS.

2. FY 2000 PLAN:

- (U) (\$13,691) USS DOLPHIN plans on supporting DT&E and OT&E testing of the LWAD, IEER, AEER, ALFS, and ADS programs. USS DOLPHIN plans to begin a DOD Resource Enhancement Program (REP) upgrade to allow the submarine to bottom, add an advanced countermeasure system and certify the platform for heavy weight torpedo exercises. This upgrade will be funded by REP and is required to meet Navy operational test deficiencies. In addition, DOLPHIN may support the Long Range Mine Reconnaissance System (LMRS) concept development efforts and ASDS system upgrades. USS DOLPHIN will continue to support near ocean bottom operations, torpedo exercises, fleet exercises and RDT&E programs modeling sonar propagation, testing sensors and communication systems. In addition, USS DOLPHIN conducts periodic phased maintenance to maintain certification and procures material to support continued operations. RAV 3-5 begins in fourth quarter FY 2000.

- (U) (\$2,193) Ex-DECATUR/SDTS conducts live fire operations at NAVAIRWARCENWPNDIV Point Mugu, CA. Planned live fire testing includes the RAM Helo Anti-Surface mode, and the ESSM. NAVSURFWARCENDIV Port Hueneme CA plans, schedules, and performs combat systems operations and maintenance on board Self Defense Test Ship (SDTS).

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: S0354**
PROGRAM ELEMENT TITLE: RD&TE Ship & Aircraft Support **PROJECT TITLE: RDT&E Ship Support**

(U) B. PROGRAM CHANGE SUMMARY	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	12,207	15,960	15,804
(U) Appropriated Value:	12,265	15,960	
(U) Adjustments from Pres Budget	-159	-76	-56
(U) FY 2001 President's Budget Submit:	12,048	15,884	15,748

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 net decrease of \$159 thousand reflects a \$49 thousand decrease for Small Business Innovative Research (SBIR), a \$56 thousand decrease for Inflation Savings, and a \$54 thousand decrease for minor program adjustments. FY 2000 net decrease of \$76 thousand reflects a \$89 thousand decrease for an Across-the-Board Congressional rescission and a \$14 thousand decrease for Strategic Sourcing Plan Service (SSP); offset by a \$27 thousand increase for minor program adjustments. FY2001 net decrease of \$56 thousand reflects a \$178 thousand increase for additional program requirements, a \$2 thousand increase for Naval Working Capital Fund (NWCf) Rate Adjustment, and a \$28 thousand increase for Military and Civilian Pay, offset by a \$160 thousand decrease for revised economic assumptions and a \$104 thousand decrease for SSP.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: W0568**
PROGRAM ELEMENT TITLE: RDT&E Ship and Aircraft Support **PROJECT TITLE: RDT&E Aircraft Flight Hours**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0568 RDT&E Aircraft Flight Hours	27,906	28,364	29,028	30,625	31,123	31,471	33,254	CONT.	CONT.
TOTAL									

Quantity of RDT&E Articles: Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: RDT&E Aircraft Flight Hours. This non-acquisition project supports direct flight hour costs, including organizational and intermediate level maintenance, as well as associated consumables, including petroleum, oil, and lubricants (POL). These flight hours are used for post-maintenance test flights, aircrew training, and the accomplishment of pilot proficiency requirements (approximately 3 hours per pilot per month), in support of Research and Development programs at four Naval Air Systems Command/Naval Surface Warfare Center/Office of Naval Research (NAVAIR/NSWC/ONR) flight activities. Annual flight simulator training for Naval Air Warfare Center (NAWC) activities, as well as pilot/Naval Flight Officer (NFO) Standardization and Instrument check flights for Navy personnel assigned to Defense Logistics Agency (DLA) activities are also supported.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$ 27,906) Met approximately 93 percent of post-maintenance test flights, aircrew training, and proficiency flight hour requirements. Provided organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Supported pilot/NFO check flights for DLA activities.

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DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: W0568**
PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support **PROJECT TITLE: RDT&E Aircraft Flight Hours**

2. FY 2000 PLAN:

- (U) (\$ 28,364) Meet post-maintenance test flights, aircrew training, and proficiency flight hour requirements. Provide organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Support pilot/NFO training and check flights for DLA activities.

3. FY 2001 PLAN:

- (U) (\$ 29,028) Meet post-maintenance test flights, aircrew training, and proficiency flight hour requirements. Provide organizational and intermediate-level maintenance, supply, and POL in support of RDT&E aircraft operations. Support pilot/NFO check flights for DLA activities.

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EXHIBIT R-2a, FY 2001 RDT&E, N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: W0568**
PROGRAM ELEMENT TITLE: RDT&E, N Ship and Aircraft Support **PROJECT TITLE: RDT&E Aircraft Flight Hours**

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	27,178	28,522	28,940
(U) Appropriated Value:	10,844	28,522	
(U) Adjustments from President's Budget:	+728	-158	+88
(U) FY 2001 President Budget Submit:	27,906	28,364	29,028

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1999 net increase of \$728 thousand reflects a \$2,805 thousand increase for the Aircraft Flight Hours transferred from PE 0605864; offset by a \$66 thousand decrease for revised economic assumptions, and a \$2,011 thousand decrease for aircraft rework effort within W0569. The FY2000 decrease reflects a \$158 thousand reduction for an Across-the-Board Congressional rescission. The FY2001 net increase of \$88 thousand reflects a \$227 thousand increase for Navy Working Capital Fund (NWCFF) Rates and a \$131 thousand increase for Military and Civilian Pay; offset by a \$194 thousand decrease for revised economic assumptions and a \$76 thousand decrease for reauthorization of requirements within the Navy.

(U) Schedule: Not applicable.

(U) Technical: Not applicable

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

Related RDT&E

(U) P.E. 0605864N, Test and Evaluation Support

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: W0568

PROJECT TITLE: RDT&E Aircraft Flight Hours

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date	Cost	Award Date		
WX	NTWL NAWCAD PAX River MD	45,201	14,810	1 Oct 98	16,340	1 Oct 99	16,593	1 Oct 00	CONT.	CONT.
WX	NTWP NAWCWD Pt Mugu	31,338	9,583	1 Oct 98	9,040	1 Oct 99	9,400	1 Oct 00	CONT.	CONT.
WX	NSWC Panama City FL	10,051	876	1 Oct 98	417	1 Oct 99	426	1 Oct 00	CONT.	CONT.
WX	NRL NAWCAD Pax River MD	16,061	2,627	1 Oct 98	2,434	1 Oct 99	2,470	1 Oct 00	CONT.	CONT.
WR	Norfolk VA San Diego CA Corpus Christi TX	297	10	1 Oct 98	133	1 Oct 99	139	1 Oct 00	CONT.	CONT.
WX, WR	Various	6,338	0		0		0			
Subtotal Project Development		109,286	27,906		28,364		29,028			

Remarks: This on going program has existed since prior to FY 1975. Detailed execution data for total prior years costs is not available prior to FY 1990

Subtotal Support

0 0 0 0 0

Remarks:

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

DATE: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER:: W0568

PROJECT TITLE: RDT&E Aircraft Flight Hours

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Cost to Complete	Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date	Cost	Award Date			
		0	0		0			0			
Subtotal Test & Evaluation											
Remarks:											
Subtotal Management											
Remarks:											
		109,286	27,906		28,364			29,028		CONT.	CONT.
Total Cost											

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: W0569**
PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support **PROJECT TITLE: RDT&E Aircraft Support**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0569 RDT&E Aircraft Support	34,009	28,523	31,352	28,462	29,888	34,412	35,719	CONT.	CONT.
TOTAL									

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: RDT&E Aircraft Support. This continuing project funds costs associated with Navy Research, Development, Test and Evaluation (RDT&E) fixed and rotary wing aircraft which accommodate test and evaluation of aircraft/weapon systems. Testing aboard these platforms reduces the number of fleet units required to support RDT&E efforts. Included in these costs are Aviation Depot-Level Repairables (AVDLRs), which are spare and replacement aircraft parts and components. In FY 1998, AVDLR costs were reclassified as direct (customer-funded) costs, and a portion of the AVDLR funding to support customer programs were redistributed to customers. The remainder of AVDLR funding was retained in the account to support overhead maintenance related flight operations, aircrew training, and proficiency flight hours. This project also funds airframe Standard Depot Level Maintenance (SDLM), in-service repairs, modifications, emergency repairs, and engine repair, as well as aircraft material condition and field inspections. Additionally, it funds Individual Material Readiness List (IMRL) tools and support equipment, modification of in-service aircraft, and other systems for application to and compatibility with RDT&E requirements. Special Flight Test Instrumentation Pool (SFTIP) equipment, shared by programs to reduce or eliminate procurement lead times and save money, is also supported.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:

- (U) (\$ 34,009) The following programs were supported as they were planned as the Navy continued to develop the transition from Aircraft Service Period Adjustment (ASPA)/SDLM to the Planned Depot Maintenance (PDM) program: SDLM, IMRL, engine, and in-service repairs support and modifications of aircraft in the RDT&E inventory. Required Depot-Level maintenance deferred to FY99 was accomplished. Incorporation of PPB-90 into RDT&E F/A-18 engines repairs was funded. AVDLR support provided for overhead flight hours, with RDT&E projects funding those AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities continued.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT:** 0605863N **PROJECT NUMBER:** W0569
PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support **PROJECT TITLE:** RDT&E Aircraft Support

2. FY 2000 PLAN:

- (U) (\$ 28,523) Complete the transition from ASPA/SDLM to the PDM program, while sustaining the following programs: IMRL, engine, and in-service repairs support and modifications of aircraft in the RDT&E inventory. Required Depot-Level maintenance deferred to FY00 will be accomplished. AVDLR support is provided for overhead flight hours, with RDTE projects funding those AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities will continue.

3. FY 2001 PLAN:

- (U) (\$ 28,352) Sustain the following programs: IMRL, engine, and in-service repairs support and modifications of aircraft in the RDT&E inventory. AVDLR support is provided for overhead flight hours, with RDTE projects funding those AVDLR costs associated with project flight hours. Operation and implementation of maintenance and material management programs at Naval Air Warfare Center activities will continue.
- (U) (\$3,000) Planned Depot Maintenance (PDM) for Big Crow effort which is a national test, training and operational electronic warfare (EW) aircraft asset managed by the Army. The Big Crow is comprised of multispectral, multifunctional EW capabilities that emulate most known threat environments.

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EXHIBIT R-2a, FY 2001 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605863N** **PROJECT NUMBER: W0569**
PROGRAM ELEMENT TITLE: RDT&E,N Ship and Aircraft Support **PROJECT TITLE: RDT&E Aircraft Support**

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	32,346	28,681	28,096
(U) Appropriated Value:	32,692	28,681	
(U) Adjustments from President's Budget:	+1,663	-158	+3,256
(U) FY 2001 President Budget Submit:	34,009	28,523	31,352

CHANGE SUMMARY EXPLANATION:

(U) Funding: The FY 1999 net increase of \$1,663 thousand reflects a \$1,901 thousand increase for aircraft rework requirements; offset by a \$26 thousand decrease for Small Business Innovative Research (SBIR), a \$64 thousand decrease for reauthorization of requirements within the Navy, and a \$148 thousand decrease for revised economic assumptions. The FY2000 decrease consists of a \$158 thousand reduction for an Across-the-Board Congressional rescission. The FY 2001 net increase of \$3,256 reflects a \$3,000 thousand increase for Big Crow effort, a \$551 thousand increase for Naval Working Capital Fund (NWCF) Rates adjustments; and a \$78 thousand increase for Military and Civilian pay; offset by a \$92 thousand decrease for NWCF Rates, a \$199 thousand decrease for revised economic assumptions; and a \$82 thousand decrease for reauthorization within the Navy.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS DATE: February 2000

BUDGET ACTIVITY: 6		PROGRAM ELEMENT: 0605863N		PROJECT NUMBER: W0569				PROJECT TITLE: RDT&E AIRCRAFT SUPPORT	
<u>Cost Categories:</u>		Total	FY 1999	FY 2000	FY 2001	FY 2001	FY 2001	Cost to	Target
Contract Method & Type	Performing Activity & Location	Prior Yrs Cost	Award Cost	Award Cost	Award Date	Cost	Award Date	Complete	Value of Contract
AVDLR	NTWL NAWCAD Pax River MD	233,137	12,365	10,611	1 Oct 99	10,929	1 Oct 00	CONT.	CONT.
	NTWP NAWCWD Pt Mugu CA NRL Pax River MD								
AIRCRAFT REWORK (SDLM, PDM, IMC)	NADEPs Cherry Pt NC Jacksonville FL North island CA Tinker AFB	54,540	9,550	10,835	1 Oct 99	13,535	1 Oct 00	CONT.	CONT.
ENGINES	NADEPs Cherry Pt NC Jacksonville FL North Island San Diego CA	27,525	6,841	3,075	1 Oct 99	2,769	1 Oct 00	CONT.	CONT.
	Other DoD Activities								
IN - SERVICE REPAIRS	NADEPs Cherry Pt NC Jacksonville FL North Island San Diego CA	10,549	1,489	1,580	1 Oct 99	1,618	1 Oct 00	CONT.	CONT.

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS DATE: February 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605863N PROJECT NUMBER: W0569 PROJECT TITLE: RDT&E AIRCRAFT SUPPORT

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date	Cost	Award Date		
SFTIP	NTWL NAWCAD Pax River MD	13,413	1,833	1 Oct 98	1,202	1 Oct 99	1,267	1 Oct 00	CONT.	CONT.
MISC: All other efforts less than \$1.0M (Aggregate Total)	NTWL NAWCAD Pax River MD NTWP NAWCWD PL Mugu CA NRL Pax River MD NAVAIR 5.0D	14,376	1,423	1 Oct 98	453	1 Oct 99	443	1 Oct 00	CONT.	CONT.

Subtotal Project Development 353,540 33,501 27,756 30,561 CONT. CONT.

Remarks: This ongoing program has existed since prior to 1975. Detailed execution data is not available prior to 1990 for AVDLR, SFTIP, Misc (IMRL, Contractor Services, Travel, etc.) nor is it available prior to 1992 for Aircraft Rework, Engines & In-Service Repairs. The total Prior Years Cost reflect execution data from 1990/1992 respectively.

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EXHIBIT R-3, FY 2001 RDT&E,N COST ANALYSIS

Date: February 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605863N

PROJECT NUMBER: W0569

PROJECT TITLE: RDT&E Aircraft Support

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
			Award Date	Cost	Award Date	Cost	Award Date	Cost		
WX	Various	4,148	348	506	522					
WX	Various	1,800	160	261	269					
Subtotal Management		5,948	508	767	791					
Remarks:										
Subtotal Support: Not Applicable.										
Remarks:										
Subtotal Test & Evaluation Not Applicable										
Remarks:										
Total Cost										
		359,488	34,009	28,523	31,352				CONT.	CONT.

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 16 of 16)

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EXHIBIT R-2, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET ITEM JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT

(U) COST: (Dollars in Thousands)	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To	Total
<u>Project Number & Title</u>	<u>Actual</u>	<u>Budget</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Estimate</u>	<u>Complete</u>	<u>Program</u>
W0541 ATLANTIC UNDERSEA TEST AND EVALUATION CENTER (AUTEUC)	45,835	45,961	47,549	48,841	49,929	50,524	52,421	CONT.	CONT.
W0566 NAVAIR ENVIRONMENTAL COMPLIANCE	4,435	4,856	4,488	4,343	4,447	4,508	4,700	CONT.	CONT.
W0653 NAVAL AIR WARFARE CENTER WEAPONS DIVISION	119,018	121,442	125,077	130,604	131,645	133,246	138,117	CONT.	CONT.
W0654 NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION	74,309	89,733	93,213	96,202	97,630	99,461	104,215	CONT.	CONT.
W2653 MAN OVERBOARD INDICATOR	969	0	0	0	0	0	0		
TOTAL	244,566	261,992	270,327	279,990	283,651	287,739	299,453	CONT.	CONT.

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides institutional maintenance and operational support for: the Naval Undersea Warfare Center Detachment Atlantic Undersea Test and Evaluation Center (NAVUNSEAWARCENT AUTEUC), Andros Island, Bahamas; the Naval Air Systems Command MRTFB Environmental Compliance Program; Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV), Point Mugu and China Lake, CA; Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV), Patuxent River, MD; and the Congressionally directed Man Overboard Indicator Program. The Test and Evaluation (T&E) activities make up the Navy portion of the Department of Defense's Major Range and Test Facility Base (MRTFB). These activities are chartered to obtain weapons system performance documentation for acquisition program milestone decisions to provide operational forces with effective weapons systems. This program provides Navy Acquisition Program Managers required test capabilities; lowers cost of T&E; removes cost and scheduling impact of providing their own T&E resources; and retains the physical airspace, land space, and sea space needed to conduct testing.

(U) JUSTIFICATION FOR BUDGET ACTIVITY:(U) This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0541**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Atlantic Undersea Test and Evaluation Center**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0541 Atlantic Test and Evaluation Center (AUTECC)	45,835	45,961	47,549	48,841	49,929	50,524	52,421	CONT.	CONT.
TOTAL									

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides continuing maintenance and operations support for the Atlantic Undersea Test and Evaluation Center (AUTECC), a deep water Test and Evaluation (T&E) facility for collecting selected underwater, surface and air tracking data on test participants. NAVUNSEAWARCEN DET AUTECC, Andros Island, Bahamas, includes the Weapons Range, Fleet Operational Readiness Accuracy Check Site, Weapons Acoustic Measurement Capability and an Ocean Haul Down Facility for large buoyant bodies. The Weapons Range provides three-dimensional (undersea, surface, and air) precision tracking capability in support of Anti-Submarine Warfare Development trials. The Fleet Operational Readiness Accuracy Check Site provides the capability to accurately calibrate and align electronic optical, acoustic, and navigational systems installed on submarines, surface ships and helicopters. The NAVUNSEAWARCEN DET AUTECC at West Palm Beach, Florida provides technical expertise in tracking systems, liaison and test planning with range users, test scheduling, and logistic support.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$22,297) Continued to maintain and operate core Major Range Test and Facility Base (MRTFB) capabilities to meet customers' test workload. Continued to operate and maintain the physical plant, essential technical test support instrumentation, and the marine craft required to perform AUTECC's mission. Replenished spares inventory to minimum levels. Increased the level of maintenance and repair efforts to perform high priority items deferred from previous years. Performed contract oversight and administration support on the AUTECC maintenance and operational support contract.
 - (U) (\$10,050) Continued rental payments to the Bahamian government for use of land and ocean in the Bahamas.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0541**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Atlantic Undersea Test and Evaluation Center**

- (U) (\$13,488) Continued civilian pay, travel, utilities, aircraft/ship/miscellaneous petroleum, oil and lubricants (POL), supplies, communication, transportation and general and administrative efforts required to maintain and operate AUTEC resources and capabilities; lease payments to the General Service Administrative (GSA) for facilities at West Palm Beach, FL.

2. FY 2000 PLAN:

- (U) (\$21,676) Continue to maintain and operate core test support resources, instrumentation systems, and marine craft required to perform AUTEC's mission. Maintain minimal level of maintenance and repair efforts to perform high priority items deferred from previous years. Perform contract oversight and administrative support on the AUTEC maintenance and operational support contract.
- (U) (\$10,225) Continue rental payments to the Bahamian government for use of land and ocean in the Bahamas. FY 2000 increase based on latest negotiated agreement with the Bahamian Government.
- (U) (\$14,060) Continue civilian pay, travel, utilities, aircraft/ship/miscellaneous POL, supply, communications, transportation and general and administrative efforts required to maintain and operate AUTEC resources and capabilities; lease payments to the General Service Administrative (GSA) for facilities at West Palm Beach, FL.

3. FY 2001 PLAN:

- (U) (\$22,758) Continue to operate and maintain core test support assets, instrumentation systems, and marine craft required to perform AUTEC's mission. Due to the combination of reduced funding and inflationary increases for contract labor and materials, the project will only support priority maintenance and repair efforts except those which impact personnel safety. Perform contract oversight and administrative support on the AUTEC maintenance and operational support contract.
- (U) (\$10,275) Continue rental payments to the Bahamian government for use of land and ocean in the Bahamas and lease payments to GSA for facilities at West Palm Beach, FL. FY 2001 increase based on latest negotiated agreement with the Bahamian Government.
- (U) (\$14,516) Continue civilian pay, travel, utilities, supply, communications, and general and administrative efforts required to maintain and operate AUTEC resources and capabilities; lease payments to the General Service Administrative (GSA) for facilities at West Palm Beach, FL.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **DATE: FEBRUARY 2000**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT NUMBER: W0541**
PROJECT TITLE: Atlantic Undersea Test and Evaluation Center

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	46,357	47,571	47,495
(U) Appropriated Value:	46,494	45,961	
(U) Adjustments from President's Budget:	-522	-1610	+54
(U) FY 2001 President's Budget Submit:	45,835	45,961	47,549

CHANGE SUMMARY EXPLANATION:

(U) Funding. FY 1999 reflects a \$252 thousand decrease for the Small Business Innovative Research (SBIR) Assessment, a \$210 thousand decrease for revised economic assumptions, and a \$60 thousand decrease for reprioritization of requirements within the Navy. FY 2000 reflects a \$1,610 thousand decrease for a Congressional adjustment. FY 2001 reflects a \$104 thousand decrease for Strategic Sourcing Plan (SSP) savings, a \$334 thousand decrease for revised economic assumptions, and a \$125 thousand decrease for reprioritization of requirements within the Navy; offset by a \$178 thousand increase for Military and Civilian Pay adjustments, and a \$439 thousand increase for Navy Working Capital Fund (NWCFF) Rate adjustments.

- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY Not Applicable.

Related RDT&E
 (U) P.E. 0604759, Major T&E Investment
 (U) P.E. 0605862, RDT&E Instrumentation Modernization

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not Applicable.

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EXHIBIT R-3, FY 2001 PRESIDENT'S BUDGET RDT&E,N COST DATE: FEBRUARY 2000
 ANALYSIS

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605664N PROJECT NUMBER: W0541
 PROJECT TITLE: Atlantic Undersea Test and Evaluation Center

Contract Method & Type	Performing Activity & Location	Total Cost	Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value
				Cost	Award Date	Cost	Award Date	Cost	Award Date		
RX	NAVFAC	140,700	10,050	10/98	10,225	10/99	10,275	10/00	Cont.	Cont.	N/A
WX	AUTEC	744,290	2,644	10/98	2,750	10/99	2,860	10/00	Cont.	Cont.	N/A
	a. Bahamian Lease		302		317		333				
	b. Travel		1,792		1,846		1,901				
	c. Transportation		130		137		143				
	d. Communications		360		396		436				
	e. Aircraft POL		170		187		206				
	f. Ships POL		1,852		1,908		1,965				
	g. Supplies		1,158		1,274		1,401				
	h. Other POL		903		939		977				
	i. G&A Expense		728		764		803				
	j. WPB Facility Rental		25746		25,218		26,249				
	k. Other Purchased Services										
Subtotal Project Development		884,990	45,835		45,961		47,549		Cont.	Cont.	N/A
Remarks:											
Subtotal Support		0	0		0		0				
Remarks:											
Subtotal Test & Evaluation		0	0		0		0				
Subtotal Management		0	0		0		0				
Remarks:											
Total Cost		884,990	45,835		45,961		47,549		Cont.	Cont.	N/A

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0566**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: NAVAIR Environmental Compliance**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0566 NAVAIR Environmental Compliance	4,435	4,856	4,488	4,343	4,447	4,508	4,700	CONT.	CONT.
TOTAL									

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This continuing project supports environmental compliance, conservation and pollution prevention related efforts at the Navy Major Range Test Facility Bases (MRTFB) located at Patuxent River, MD, China Lake, CA, Point Mugu, CA, and Atlantic Undersea Test and Evaluation Center (AUTECE), Bahamas. The Navy MRTFB environmental projects include ongoing efforts to comply with Federal, State, and local environmental requirements. Beginning in FY 2000, this project transfers from Program Element 0605862N, RDT&E,N Instrumentation Modernization.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$4,435) Removed and disposed Polychlorinated Biphenyl (PCB) contaminated transformers at China Lake and Patuxent River. Continued underground storage tank (UST) remediations at Patuxent River and AUTECE. Continued conversions of Class I ozone depleting substance (ODS) air conditioning and refrigeration equipment at China Lake and Point Mugu. Continued endangered species inventories and initiated sludge remediation efforts at Point Mugu and San Nicolas Island. Designed and built a fire containment system in Burro Canyon at China Lake. (Project transferred from PE 0605862N.)

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0566**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: NAVAIR Environmental Compliance**

2. FY 2000 PLAN:

- (U) (\$4,856) Close a fuel tank and begin a UST remediation at AUTEK. Continue the removal and disposal of PCB contaminated items at China Lake and Patuxent River. Continue UST remediations at Patuxent River. Initiate upgrade of an oily waste/waste oil (OW/WO) management/recycle facility at China Lake. Replace refrigeration systems at China Lake's SKYTOP test area. Perform air transport study at Point Mugu.

3. FY 2001 PLAN:

- (U) (\$4,488) Continue UST remediation at AUTEK and Patuxent River. Continue the removal and disposal of PCB contaminated items at China Lake and Patuxent River. Continue upgrade of an oily waste/waste oil (OW/WO) management/recycle facility at China Lake. Continue refrigeration system replacement at China Lake's SKYTOP test area. Continue air transport study at Point Mugu.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	4,561	4,856	4,496
(U) Appropriated Value:	4,572	4,856	
(U) Adjustments from President's Budget:	-126	0	-8
(U) FY 2001 President's Budget Submit:	4,435	4,856	4,488

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 reflects a \$105 thousand decrease due to a reprioritization of requirements within the Navy and a \$21 thousand decrease due to Revised Economic Assumptions. FY 2001 reflects a \$19 thousand increase for Military and Civilian Pay adjustments and a \$13 thousand increase for Navy Working Capital Fund (NWC/F) Rate adjustments; offset by a \$27 thousand decrease for revised economic assumptions, a \$12 thousand decrease for reprioritization of requirements within the Navy, and a \$1 thousand decrease for Strategic Sourcing Plan (SSP) savings.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0566**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: NAVAIR Environmental Compliance**

(U) PROGRAM CHANGE SUMMARY (continued)

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

Related RDT&E

(U) P.E. 0604759N, Major Test and Evaluation Investment

(U) P.E. 0605864N, Test and Evaluation Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not Applicable.

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EXHIBIT R-3, FY 2001 PRESIDENT'S BUDGET RDT&E,N COST ANALYSIS

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605864N

PROJECT NUMBER: W0566
PROJECT TITLE: AIR ENVIRONMENTAL COMPLIANCE

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		<u>Total Cost</u>	<u>Target Value of Contract</u>	
				<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>	<u>Cost</u>	<u>Award Date</u>			<u>Cost to Complete</u>
a. Environmental Efforts	WX	AUTEC, Bahamas	3,108	388	10/98	470	10/99	650	10/00	CONT.	CONT.	N/A
b. Environmental Efforts	WX	NAS Patuxent River, Maryland	13,006	1,459	10/98	1,360	10/99	1,168	10/00	CONT.	CONT.	N/A
c. Environmental Efforts	WX	NAWS China Lake, California	12,277	1,400	10/98	1,380	10/99	1,462	10/00	CONT.	CONT.	N/A
d. Environmental Efforts	WX	NAWS Point Mugu, California	10,560	1,188	10/98	1,646	10/99	1,208	10/00	CONT.	CONT.	N/A
Subtotal Project Development			38,951	4,435		4,856		4,488				
Remarks:												
Subtotal Support			0	0		0		0		CONT.	CONT.	
Remarks												
Not applicable.												
Subtotal Test & Evaluation			0	0		0		0		0	0	
Remarks												
Not applicable.												
Subtotal Management			0	0		0		0		0	0	
Remarks												
Not applicable.												
Total Cost			38,951	4,435		4,856		4,488		CONT.	CONT.	N/A

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Naval Air Warfare Center Weapons Division**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0653 Naval Air Warfare Center Weapons Division (NAVAIRWARCENWPNDIV)	119,018	121,442	125,077	130,604	131,645	133,246	138,117	CONT.	CONT.
TOTAL Quantity of RDT&E Articles Not Applicable									

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Project provides continuing maintenance and operational support for the NAVAIRWARCENWPNDIV Pacific Ranges consisting of China Lake Ranges and the Point Mugu Sea Range. The Pacific Ranges use China Lake's 1.1 million acres of land and 17,000 square miles of military restricted (R-2508) airspace together with Point Mugu's 125,000 square miles of instrumented sea range and 36,000 square miles of controlled overlying airspace, a neighboring deep draft port facility at Port Hueneme, and airfield and test instrumentation at Saint Nicolas Island to perform its Test and Evaluation mission. The Point Mugu Sea Range has unique sea, mountain, and instrumented offshore islands, as well as the interconnectivity needed to support large complex operations. The China Lake air/ground ranges contain unique terrain features, and are instrumented for both low level and high altitude missile and weapon system testing. The Electronic Combat Range (ECR) at China Lake provides outdoor free space development and operational testing of airborne electronic warfare (EW) systems and tactics against shipboard and land based air defense systems over a land range of 700 square miles. These ranges perform metric radar, multilateration and optical tracking of test objects; command, control, and destruct for range safety purposes; communications; frequency interference control and analysis; collection processing and display of telemetered data; real-time data processing and display; and the operation of a full scale aerial target launch capability. Other test capabilities include a static Radar Cross Section (RCS) measurement facility; propulsion, warhead, environmental, rocket motor, and other missile component test facilities; parachute/weapon recovery system test facilities; and gun ranges. This project also supports the R-2508 Air Space Control System, and other costs not chargeable to the customer.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$59,058) Operated core MRTFB capabilities required to meet acquisition program and fleet test workload. Supported indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Ordnance test facilities, operational target vehicle launch functions and test wing aircraft maintenance. Supported San Nicolas Island (SNI) T&E related costs. Reimbursed the Pacific Fleet for support services at Point Mugu and SNI.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Naval Air Warfare Center Weapons Division**

- (U) (\$4,351) Continued to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems.
- (U) (\$3,843) Provided transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, critical training necessary to manage and sustain MRTFB operations, and critical travel funding required to attend mission related meetings.
- (U) (\$5,731) Continued to provide MRTFB Real Property Maintenance Activities (RPMA) funding for mission critical emergency call services, and system maintenance. Initiated a limited phased-in preventive maintenance plan for SNI and other major repairs and minor construction to meet customer requirements. Funding level deferred essential road and facility structural and support system repairs.
- (U) (\$4,067) Continued essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
- (U) (\$41,968) Continued to provide for annual utility costs, facility service contracts, workers' compensation costs for MRTFB employees, and contribution to Command's General & Administrative (G&A) expenses for comptroller, contracting, personnel, and other support services. Reimbursed the Pacific Fleet for utilities and overhead support at Point Mugu.

2. FY 2000 PLAN:

- (U) (\$62,744) Operate core MRTFB capabilities required to meet acquisition program and fleet test workload. Support essential components of indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Ordnance test facilities, operational target vehicle launch functions and aircraft maintenance. Implements transfer of SNI operations to the MRTFB. Funds increased SNI maintenance and operation contracts for barges and personnel/equipment shuttle services. Reimburses the Pacific Fleet for support services at Point Mugu and SNI.
- (U) (\$4,342) Continue to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N**
PROGRAM ELEMENT TITLE: Test and Evaluation Support

PROJECT NUMBER: W0653
PROJECT TITLE: Naval Air Warfare Center Weapons Division

- (U) (\$3,856) Provide transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, travel and critical training necessary to manage and sustain MRTFB operations.
 - (U) (\$5,808) Continue MRTFB RPMA funding for mission emergency call services and system maintenance. Funding supports a limited preventive maintenance plan for SNI, and a portion of the major repairs and minor construction to meet customer requirements. Funding level deferred essential road and facility repairs.
 - (U) (\$4,067) Continue essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
 - (U) (\$40,625) Continue annual utility costs, facility service contracts, workers' compensation costs for MRTFB employees, and contribution to Command's G&A expenses for comptroller, contracting, personnel, and other support services. Reimburses the Pacific Fleet for utilities and overhead support at Point Mugu.
3. FY 2001 PLAN:
- (U) (\$63,021) Operate core MRTFB capabilities required to meet acquisition program and fleet test workload. Support essential components of indirect civilian salary and contractor costs required to manage, operate, and maintain Pacific Ranges' Sea, Air, Ground, Electronic Combat, Ordnance test facilities, operational target vehicle launch functions and aircraft maintenance. Completes phase-in of funding for SNI operations. Reimburses the Pacific Fleet for support services at Point Mugu and SNI.
 - (U) (\$4,327) Continue to support priority equipment calibration, materials, supplies, technical equipment and spare parts for core range and target instrumentation and equipment systems.
 - (U) (\$3,762) Provide transportation, printing, communications, annual leases for offshore island and remote location instrumentation sites, Host Tenant Agreement costs, travel and critical training necessary to manage and sustain MRTFB operations.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Naval Air Warfare Center Weapons Division**

- (U) (\$9,678) Continue MRTFB RPMA funding for mission emergency call services and system maintenance. Funding supports a preventive maintenance plan for SNI, road maintenance/major repairs at SNI and China Lake, and other major repairs and minor construction to meet customer requirements. Funding level allows some prior year deferred infrastructure maintenance and repair efforts to be completed.
- (U) (\$4,038) Continue essential support for maintaining R-2508 Air Space Control System and DC-130 target air launch capabilities.
- (U) (\$40,251) Continue annual utility costs, facility service contracts, worker's compensation costs for MRTFB employees, and contribution to Command's G&A expenses for comptroller, contracting, personnel, and other support services. Reimburses the Pacific Fleet for utilities and overhead support at Point Mugu.

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	119,797	125,692	125,426
(U) Appropriated Value:	127,017	121,442	
(U) Adjustments from President's Budget:	-779	-4,250	-349
(U) FY 2001 President's Budget Submit:	119,018	121,442	125,077

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 reflects a \$184 thousand decrease for reprioritization of requirements within the Navy, and a \$595 thousand decrease for revised economic assumptions. FY 2000 reflects a \$4,250 thousand decrease for a Congressional adjustment. FY 2001 reflects a \$855 thousand decrease for revised economic assumptions and a \$328 thousand decrease for reprioritization of requirements within the Navy; offset by a \$254 thousand increase for Navy Working Capital Fund Rate adjustments and a \$580 thousand increase for Military and Civilian Pay adjustments.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Naval Air Warfare Center Weapons Division**

(U) Schedule: Not Applicable.

(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

Related RDT&E

(U) P.E. 0604759N, Major T&E Investment

(U) P.E. 0605862N, RDT&E Instrumentation Modernization

(U) P.E. 0604256N, Threat Simulator Development

(U) P.E. 0604258N, Target Systems Development

(U) P.E. 0605863N, RDT&E,N Ship and Aircraft Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy.

(U) E. SCHEDULE PROFILE: Not Applicable.

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DATE: FEBRUARY 2000

EXHIBIT R-3, FY 2001 PRESIDENT'S BUDGET RDT&E,N COST ANALYSIS

PROJECT NUMBER: W0653
PROJECT TITLE: Naval Air Warfare Center-Weapons Division

PROGRAM ELEMENT: 0605864N

BUDGET ACTIVITY: 6

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Target Value of Contract
				Cost	Award Date	Cost	Award Date	Cost	Award Date	
	WX	NAWCWD	2,646,374	43,958	10/98	43,958	10/99	45,716	10/00	
Civilian Pay				3,843		3,856		3,762		
Travel/Transportation/Comm/Printing				4,434		4,508		4,530		
Utilities/Leases				4,398		4,327		4,455		
Equipment Maintenance				14,769		18,526		16,888		
Range Ops/Support (Purchased Services)				5,731		5808		9,678		
Facility Repairs/Minor Construction				4,351		4,342		4,327		
Supplies/Equipment				37,534		36,117		35,721		
General and Administrative										
Subtotal Product Development			2,646,374	119,018		121,442		125,077		

Remarks: FY 2000 and FY 2001 Range Operations/Support, and Facility Repairs/Minor Construction differences derive from the implementation of the transfer of SNI to the MRTFB, reimbursement to the Pacific Fleet for services/utilities, etc. and infrastructure maintenance and repair efforts deferred from prior years due to budgetary constraints.

Subtotal Test & Evaluation

Remarks:

Subtotal Management

Remarks:

Total Cost

2,646,374 119,018 121,442 125,077 Cont Cont

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0654**
PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0654 Naval Air Warfare Center Aircraft Division (NAVAIRWARCENACDIV)	74,309	89,733	93,213	96,202	97,630	99,461	104,215	CONT.	CONT.
TOTAL									

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the maintenance and operation of the NAVAIRWARCENACDIV's capabilities to conduct test and evaluation and provide fleet support for air platforms. NAVAIRWARCENACDIV has extensive airfield, flight test ranges, aircraft systems test facilities and simulation laboratories to support aircraft RDT&E. This includes 50,000 square miles of airspace, 39,375 square miles of sea space, and 7,950 acres of land space. Product areas include aircraft systems flight test and evaluation, carrier suitability certification, test article preparation, installed system test and evaluation, and modeling and simulation support of the acquisition process. The T&E Group, Patuxent River, performs development test and evaluation and supports operational test and evaluation of manned and unmanned air vehicle systems, including mission systems, equipment, subsystems, components, and support systems. This project also provides test and evaluation facilities for air-breathing propulsion systems, and extensive facilities for conducting both installed and uninstalled aircraft engine development and test and evaluation. This project funds costs not chargeable to customers.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENTS:
 - (U) (\$18,675) Continued to operate and maintain mission core/essential Major Range Test Facility Base (MRTFB) capabilities to meet customers' test workload. Funds civilian labor required to manage, operate, and maintain the MRTFB.
 - (U) (\$6,339) Continued to provide essential travel, transportation, collateral equipment, and supplies required to support the continued operations of the MRTFB.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605864N PROJECT NUMBER: W0654
PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT PROJECT TITLE: Naval Air Warfare Center
Aircraft Division

- (U) (\$17,616) Continued to provide communications, purchased equipment maintenance, printing and reproduction, and purchased service contracts necessary to manage and sustain MRTFB operations.
- (U) (\$7,468) Continued critical maintenance and repair of MRTFB facilities.
- (U) (\$717) Due to budgetary constraints, minimum levels of major repair and minor construction efforts completed to sustain essential MRTFB capabilities.
- (U) (\$20,376) Reimbursed the Command for essential General and Administrative (G&A) support services, (e.g., comptroller, contracting, personnel, and other services).
- (U) (\$3,118) Continued to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases.

2. FY 2000 PLAN:

- (U) (\$22,996) Operate and maintain mission essential/core MRTFB capabilities to meet customer test workload. Funds civilian labor required to manage, operate, and maintain the MRTFB. Increase supports vacant positions required to operate test facilities and realigns personnel in accordance with OSD/Navy direction.
- (U) (\$6,155) Continue to provide travel, transportation, collateral equipment, and supplies required to support continued operations of the MRTFB.
- (U) (\$20,175) Continue to provide communications, purchased equipment maintenance, printing and reproduction, and cost of purchased service contracts necessary to manage and sustain MRTFB operations. Implement Navy Comptroller and OSD policy to fully fund the institutional costs of the MRTFB through this project and removes indirect cost surcharges to T&E customers.
- (U) (\$8,925) Continue maintenance and repair of MRTFB facilities. Increase in funds provides for maintenance of the Large Anechoic Chamber and the Propulsion Systems Evaluation Facility.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605864N PROJECT NUMBER: W0654
PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT PROJECT TITLE: Naval Air Warfare Center Aircraft Division

- (U) (\$5,977) Provide for major repair and minor construction necessary to sustain essential MRTFB capabilities. Increases addresses the \$27M backlog of maintenance and repair items deferred from previous years.
- (U) (\$22,161) Reimburse the Command for essential G&A support services, (e.g., comptroller, contracting, personnel, and other services).
- (U) (\$3,344) Continue to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases.

3. FY 2001 PLAN:

- (U) (\$24,531) Operate and maintain mission essential/core MRTFB capabilities to meet customer test workload. Funds civilian labor required to manage, operate, and maintain the MRTFB.
- (U) (\$7,457) Provide travel, transportation, collateral equipment, and supplies required to support continued operations of the MRTFB. Increase funds Business Process Reengineering equipment which will accrue savings to customers, and it provides propulsion acquisition System equipment upgrades not funded by BRAC.
- (U) (\$21,525) Continue to provide communications, purchased equipment maintenance, printing and reproduction, and purchased service contracts necessary to manage and sustain MRTFB operations.
- (U) (\$9,262) Continue maintenance and repair of MRTFB facilities
- (U) (\$4,559) Provides for major repair and minor construction necessary to sustain essential MRTFB capabilities and addresses the backlog of maintenance and repair items.
- (U) (\$22,483) Reimburse the Command for essential G&A support services, (e.g., comptroller, contracting, personnel, and other services).
- (U) (\$3,396) Continue to provide mission essential annual utility costs, equipment rentals, and land, building, and facility leases.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W0654**
PROGRAM ELEMENT TITLE: TEST AND EVALUATION SUPPORT **PROJECT TITLE: Naval Air Warfare Center Aircraft Division**

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	71,074	92,873	94,477
(U) Appropriated Value:	81,290	89,733	
(U) Adjustments from President's Budget:	+3,235	-3,140	-1,264
(U) FY 2001 President's Budget Submit:	74,309	89,733	93,213

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 reflects a \$3,616 thousand increase for r reprioritization of requirements within the Navy; offset by a \$13 thousand decrease for revised economic assumptions, a \$368 decrease for revised economic assumptions. FY 2000 reflects a \$3,140 thousand decrease for a Congressional adjustment. FY 2001 reflects a \$1,040 thousand decrease for Strategic Sourcing Plan (SSP) savings, a \$639 thousand decrease for revised economic assumptions, and a \$245 thousand decrease for reprioritization of requirements within the Navy; offset by a \$193 thousand increase for Naval Working Capital Fund (NWCF) Rate adjustments and a \$467 thousand increase for Military and Civilian Pay adjustments.

(U) Schedule: Not Applicable.
(U) Technical: Not Applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable.

Related RDT&E
(U) P.E. 0604759N, Major T&E Investment
(U) P.E. 0605862N, RDT&E Instrumentation Modernization
(U) P.E. 0605863N, RDT&E,N Ship and Aircraft Support

(U) D. ACQUISITION STRATEGY: This is a non-ACAT Program with no specific acquisition strategy
(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 PRESIDENT'S BUDGET RDT&E,N COST ANALYSIS DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605864N PROJECT NUMBER: W0654 PROJECT TITLE: NAVAL AIR WARFARE CENTER AIRCRAFT DIVISION

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Total Cost	Target Value of Contract
			Cost	Award Date	Cost	Award Date	Cost	Award Date		
WX	NAWCAD	1,720,733	18,675	10/98	22,996	10/99	24,531	10/00	CONT.	CONT.
a. Civilian Pay			1,217		1,294		1,378			
b. Travel/Transportation/Comm/Printing			3,118		3,344		3,396			
c. Utilities/Leases			4,838		5,303		6,163			
d. Equipment Maintenance			12,298		14,640		15,123			
e. Range Ops/Support (Purchased Ser)			8,185		14,902		13,821			
f. Facility Repairs/Minor Construction			5,602		5,093		6,318			
g. Supplies/Equipment			20,376		22,161		22,483			
h. General and Administrative										
Subtotal Project Development		1,720,733	74,309		89,733		93,213		CONT.	CONT.

Remarks: Difference between FY 1999 and FY 2000 Civilian Pay will fund positions required to operate test facilities and realigns personnel in accordance with OSD/Navy direction. Increase between FY 1999 and FY 2000 in Equipment Maintenance and Range Ops/Support (Purchased Services) is the direct result of the Navy Comptroller's action based on OSD direction to fully fund institutional costs. Differences between FY 1999 through FY 2001 in Facility Repairs/Minor Construction are due to increased recurring maintenance and repair costs associated with operations of the new Large Anechoic Chamber and the Propulsion Systems Evaluation Facility, and addressing the \$27M backlog of maintenance and repair items deferred from previous years. Increase in Supplies/Equipment between FY 2000 and 2001 provides funds for propulsion acquisition system equipment not funded by BRAC.

Subtotal Support		0	0	0	0	0	0	0		
Remarks:										
Subtotal Test & Evaluation		0	0	0	0	0	0	0		
Remarks:										
Subtotal Management		0	0	0	0	0	0	0		
Remarks:										
Total Cost		1,720,733	74,309		89,733		93,213		CONT.	CONT.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W2653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Man Overboard Indicator Program**

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1999 Actual</u>	<u>FY 2000 Budget</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2653 - Man Overboard Indicator Program	969	0	0	0	0	0	0	0	969
TOTAL									

Quantity of RDT&E Articles Not Applicable

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides funds for the evaluation of commercially available Man Overboard Indicator technology to determine the feasibility of using the personal monitoring/tracking systems for Navy personnel aboard Navy ships.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. FY 1999 ACCOMPLISHMENT:
 - (U) (\$969) Procured, evaluated, and tested state-of-the-art technology for man overboard indicator monitoring/tracking systems and emergency pocket size transmitters for use by flight deck personnel aboard Navy ships; including monitoring the wearer's physical conditions and environment, mark ground proximity information, define thermal operating ranges, and establish water resistance parameters.

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EXHIBIT R-2a, FY 2001 PRESIDENT'S BUDGET RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: FEBRUARY 2000

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W2653**
PROGRAM ELEMENT TITLE: Test and Evaluation Support **PROJECT TITLE: Man Overboard Indicator Program**

U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:	998	0	0
(U) Appropriated Value:	1,000	0	
(U) Adjustments from President's Budget:	-29	0	0
(U) FY 2001 President's Budget Submit:	969	0	0

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1999 reflects a \$24 thousand decrease for the Small Business Innovative Research (SBIR) assessment and a \$5 thousand decrease for revised economic assumptions.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not Applicable

(U) D. ACQUISITION STRATEGY: Not applicable.

(U) E. SCHEDULE PROFILE: Not applicable.

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EXHIBIT R-3, FY 2001 PRESIDENT'S BUDGET RDT&E,N DATE: FEBRUARY 2000
COST ANALYSIS

BUDGET ACTIVITY: 6 **PROGRAM ELEMENT: 0605864N** **PROJECT NUMBER: W2653**
Man Overboard Indicator Efforts **Man Overboard Indicator Program**

Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999		FY 2000		FY 2001		Cost to Complete	Total Cost	Target Value of Contract
			Award Date	Cost	Award Date	Cost	Award Date	Cost			
WX	NAWCAD, Lakehurst, NJ	0	969	0	0	0	0	0	0	969	

Remarks:

Subtotal Support

Remarks:

Subtotal Test & Evaluation

Remarks:

Subtotal Management

Remarks:

Total Cost

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Exhibit R-3, Project Cost Analysis
(Exhibit R-3, Page 23 of 23)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: FEBRUARY 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605865N
PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability

U) COST: (Dollars in Thousands)

ROJECT UMBER & ITILE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE	TOTAL PROGRAM
0831	8,990	9,121	8,957	9,158	9,204	9,348	9,729	CONT.	CONT.

Operational Test and Evaluation Force Support

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element provides Commander, Operational Test and Evaluation Force (COMOPTEVFOR) general support funding. This funding ensures COMOPTEVFOR's compliance with requirements established by Title 10 Law and directives from the Secretary of Defense and the Secretary of the Navy to carry out independent operational testing and evaluation. This funding is used for planning, conduct (including early operational test and evaluation), and reporting of the results of operational test and evaluation of weapon systems projects and for tactics validation for the use of those systems.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

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Budget Item Justification
(Exhibit R-2, page 1 of 3)

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FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: FEBRUARY 2000

UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605865N PROJECT NUMBER: R0831
PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability PROJECT TITLE: Operational Test and Evaluation Force Support

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$6,710) Operationally tested and evaluated Chief of Naval Operations (CNO) projects commensurate with authorized funding level.
 - (U) (\$2,280) Maintained level of effort associated with the DOD 5000 acquisition guidance which required increased COMPTEVFOR involvement in early operational assessments, developmental testing advanced concept technology demonstrations, and advanced technology demonstrations.
2. (U) FY 2000 PLAN:
 - (U) (\$6,841) Operationally test and evaluate CNO projects commensurate with authorized funding level.
 - (U) (\$2,280) Maintain level of effort associated with the DOD 5000 acquisition guidance which requires increased COMPTEVFOR involvement in early operational assessments, developmental testing, advanced concept technology demonstrations, and advanced technology demonstrations.
3. (U) FY 2001 PLAN:
 - (U) (\$6,718) Operationally test and evaluate CNO projects commensurate with authorized funding level.
 - (U) (\$2,239) Maintain level of effort associated with the DOD 5000 acquisition guidance which requires increased COMPTEVFOR involvement in early operational assessments, developmental testing, advanced concept technology demonstrations, and advanced technology demonstrations.

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Budget Item Justification
(Exhibit R-2, page 2 of 3)

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UDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605865N PROGRAM ELEMENT TITLE: Operational Test and Evaluation Capability PROJECT NUMBER: R0831 PROJECT TITLE: Operational Test and Evaluation Force Support

FY 2001 RDT&E,N BUDGET ITEM JUSTIFICATION SHEET DATE: FEBRUARY 2000

	FY 1999	FY 2000	FY2001
(U) PROGRAM CHANGE SUMMARY:			
(U) FY 2000 President's Budget:			
(U) Appropriated Value:	9,054	9,172	9,020
(U) Adjustments from PRESBUDG:			
(U) Execution Adjustments	-1		
(U) Various Rate Adjustments	-42	-51	-63
(U) Congressional Rescissions			
(U) SBIR/STTR Adjustment	-21		
(U) FY 2001 PRESBUDG Budget Submission:	8,990	9,121	8,957

- (U) Schedule: Not applicable.
- (U) Technical: Not applicable.
- (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.
- (U) RELATED RDT&E: Not applicable.
- (U) SCHEDULE PROFILE: Not applicable.

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Budget Item Justification
(Exhibit R-2, page 3 of 3)

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EXHIBIT R-2, FY 2001 RDT&E,N Budget Item Justification DATE: FEB 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N
 PROGRAM ELEMENT TITLE: Navy Space and Electronic Warfare (SEW) Support

(U) COST: (Dollars in Thousands)

PROJECT NUMBER	FY 1999 ESTIMATE	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 TO COMPLETE PROGRAM	TOTAL
R0739 Navy C4I Top Level Requirements	1,520	775	1,543	1,577	1,585	1,709	1,717	CONT. CONT.
X0706 EMI Reduction and Radio Frequency Management	751	1,647	1,719	1,831	1,803	1,862	1,966	CONT. CONT.
Total	2,271	2,422	3,262	3,408	3,388	3,571	3,683	CONT. CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Project R0739 Navy C4I Top Level Requirements - Analyzes fleet requirements and research and development technology to develop top level plans for operating Navy Communications, Command and Control Computers, and Intelligence (C4I) and space systems in the Space and Electronic Warfare (SEW) mission area.

Project X0706 Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management - Develops advanced technology to identify and reduce EMI sources from Navy systems and platforms.

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installations required for general research and development use.

UNCLASSIFIED

EXHIBIT R-2, FY 2001 RDT&E,N Budget Item Justification

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROGRAM ELEMENT TITLE: Navy Space and Electronic Warfare (SEW) Support

B. (U) PROGRAM CHANGE SUMMARY:

- FY 1999: \$-65K: SBIR/STTR Transfer. \$-1,100K: Departmental Adjustment
\$-15K: Various rate adjustments. \$-15K: Execution Adjustments
- FY 2000: \$-9K: Congressional Across-the-Board Reduction. \$36K Portion of extramural
program is reserved for Small Business Innovation Research.
assessment in accordance with 15 USC 638.
- FY 2001: \$-14K: Miscellaneous Departmental adjustments

R-1 Shopping List - Item No 148-2 of 148-10

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Exhibit R-2, RDT&E,N Budget Item Justification

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification
 BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N DATE: FEB 2000
 PROGRAM ELEMENT TITLE: SEW Support PROJECT NUMBER: R0739
 PROJECT TITLE: Navy C4I Top Level Requirements

(U) COST: (Dollars in thousands)

PROJECT NUMBER & TITLE	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TOTAL PROGRAM
R0739	1,520	775	1,543	1,577	1,585	1,709	1,717	1,717
								CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides analysis of fleet requirements and research and development technology to develop top level plans for operating Navy Communications, Command, Control, Communication and Computer Integration (C4I) and space systems in the Space and Electronic Warfare mission area.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:
 - (U) (\$168) Identified and quantified the effects of operator training quality on Tactical Data Link systems operational effectiveness.
 - (U) (\$152) Developed and maintained a cadre of personnel with specialized educations and focused experience as information warriors. Built on success of previous effort with tracking system to ensure personnel distribution of Information Warfare professionals was matched to their abilities.
 - (U) (\$168) Identify and evaluate tools that can enhance the effectiveness of the average shipboard LAN administrator.
 - (U) (\$110) Redesign a system to combine the Mobile Ashore Support Terminal and Mobile Integrated Command Facility capabilities.
 - (U) (\$174) Studied and planned for the magnitude of the requirements and robust applications which emerged during the study of the Naval Warfare Mission Planning Roadmap. Built on that study by further defining the scope of the problem and ensuring a joint interoperability.
 - (U) (\$253) Determined requirements for mobile user communications for the year 2007 and examined advanced system concepts to ascertain the most cost-effective way to meet the requirements.
 - (U) (\$56) Assessed the commercial Satellite Communication industry with an eye toward engaging the commercial SATCOM industry to take advantage of developments in commercial technology, influencing commercial designs, and developing an acquisition strategy that builds the "Best Business case" for the Navy.
 - (U) (\$112) Identified those C4I Surveillance and Reconnaissance components which have the greatest effect on overall Navy strike operational success and used these results to identify candidate programs

R-1 Shopping List - Item No 148-3 of 148-10
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 Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

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EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification

DATE: FEB 2000

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: R0739

BUDGET ACTIVITY: 6

PROGRAM ELEMENT TITLE: SEW Support

PROJECT TITLE: Navy C4I Top Level

Requirements

for new or enhanced RDTEN support. Provided extensive modeling and analysis to support contentions proposed.

- (U) (\$200) Assessed and quantified, within the Revolution in Business Affairs framework, how becoming a Network Centric Navy enables efficiencies from process and organizational changes.
- (U) (\$127) Studied the utility of redundancies in communications paths, and described their use in terms of the importance of the information exchange requirement.

2. (U) FY 2000 PLAN:

- (U) (\$125) Develop and maintain a cadre of personnel with specified education and focused experience as information warriors. Built on the success of previous efforts with tracking system, ensure personnel distribution of Information Warfare professionals matched to their abilities.
- (U) (\$115) Investigate the feasibility of developing a platform-independent, external mount airborne pod for tactical Signal Intelligence (SIGINT) data collection that is Joint Airborne SIGINT Architecture compliant.
- (U) (\$170) Develop an acceptable useful methodology and process for incorporating desired operational capabilities and results of Fleet Battle Experiments into N6 objectives.
- (U) (\$250) Research and analyze the scaleable effects of shipboard radio frequency emitters installed on Aegis cruisers on spaced-based systems.
- (U) (\$115) Develop a study group to review Extensible Markup Language (XML) technology and produce options for how to best implement XML as a "smart pull" process to establish a truly "seamless" method of transferring and exchanging data to a variety of systems.

3. (U) FY 2001 PLAN:

- (U) (\$550) Investigate potential benefit of and leveraging capability from continual reduction in chip development prices for DoN.
- (U) (\$446) Support architectural analysis for web-based interaction DON-wide, including considerations to ensure maintenance of appropriate security. Product would be a comprehensive architecture displaying this security, the interfaces, and the functions.
- (U) (\$547) Identify requirements to improve Graphic User Interfaces by using tools to enhance intuitive understanding (i.e., icons and pull down menus) while providing all required capabilities for DON missions/administrative functions.

B. (U) PROGRAM CHANGE SUMMARY:

R-1 Shopping List - Item No 148-4 of 148-10

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Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification

DATE: FEB 2000

BUDGET ACTIVITY: 6

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: R0739

PROGRAM ELEMENT TITLE: SEW Support

PROJECT TITLE: Navy C4I Top Level

Requirements

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) FY 2000 President's Budget:			
(U) Appropriated Value:	1,606	780	1,627
(U) Congressional Rescissions		-5	
(U) FY-99 SBIR/STTR Transfer	-36		-70
(U) Execution Adjustments	-42		-14
(U) Various Rate Adjustments	-7		
(U) FY 2001 PRESBDG Submission:	1,520	775	1,543

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

C. (U) OTHER PROGRAM FUNDING SUMMARY: Not applicable.

(U) RELATED RDT&E: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

R-1 Shopping List - Item No 148-5 of 148-10

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Exhibit R-2a, RDT&E,N Project Justification (Project R0739)

UNCLASSIFIED

EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification

DATE: FEB 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N PROJECT NUMBER: X0706
 PROGRAM ELEMENT TITLE: SEW Support PROJECT TITLE: EMI Reduction and Radio Frequency Management

(U) COST: (Dollars in Thousands)

PROJECT NUMBER	FY 1999 ACTUAL	FY 2000 ESTIMATE	FY 2001 ESTIMATE	FY 2002 ESTIMATE	FY 2003 ESTIMATE	FY 2004 ESTIMATE	FY 2005 ESTIMATE	TO COMPLETE PROGRAM	TOTAL
X0706 EMI Reduction and Radio Frequency Management	751	1,647	1,719	1,831	1,803	1,862	1,966	CONT.	CONT.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Electromagnetic Interference (EMI) Reduction and Radio Frequency (RF) Management. This project develops tools to identify and reduce EMI sources from Navy systems and platforms. There are several tools under development to identify and reduce EMI through proper use of the electromagnetic spectrum. The Battle Force (BF) EMI Evaluation System (BEES) is a computer-aided force-level EMI evaluation tool that is used to develop BF Electromagnetic Environmental Effects (E3) policy for naval operations in the joint arena and fosters national and international inter-platform EM compatibility (EMC) during operations and exercises. The Automated Spectrum Planning, Engineering, Coordination, and Tracking System (ASPECTS) is a computer-aided force-level communications planning and frequency management tool that is used to plan communication links and analyze, allocate, and assign communication and radar frequencies for fleet operations. Research includes advanced technology chamber (ATC), development of new communications and planning techniques to avoid EMI, and development of guidance to harmonize commercial EMI practices.

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EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification

DATE: FEB 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N
PROGRAM ELEMENT TITLE: SEW Support

PROJECT NUMBER: X0706
PROJECT TITLE: EMI Reduction and Radio
Frequency Management

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 ACCOMPLISHMENTS:

- (U) (\$301) ASPECTS: Completed the development of capability to receive recordings of the EME to be used in frequency management. Continued ASPECTS and EMCAP software updates. Continued real-time frequency management research.
- (U) (\$337) BEES: Continued development of generic and specific electronic communications systems models. Apply conditional logic to selected additional models to replicate operational decision making as it relates to E3.
- (U) (\$113) Criteria and Test Procedures: Continued to investigate industrial standards (foreign and domestic) for conversion to military standards. Continued to incorporate Coherent Measurement Techniques into E3 test criteria.

2. (U) FY 2000 PLAN:

- (U) (\$957) ASPECTS: Enhance development efforts for real time use of spectrum for automated C4ISR systems to adapt to the electromagnetic environment. Continue ASPECTS and EMCAP software updates.
- (U) (\$442) BEES: Develop a common operating system version of the analysis software that can be run on networked and stand alone machines
- (U) (\$248) Criteria and Test Procedures: Continue to investigate industrial standards (foreign and domestic) for conversion to military standards. Develop new communications planning techniques to avoid EMI.

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Exhibit R-2a, RDT&E,N Project Justification (Project X0706)

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EXHIBIT R-2a, FY 2001 RDT&E,N Project Justification

DATE: FEB 2000

BUDGET ACTIVITY: 6 PROGRAM ELEMENT: 0605866N PROJECT NUMBER: X0706
PROGRAM ELEMENT TITLE: SEW Support PROJECT TITLE: EMI Reduction and Radio
Frequency Management

3. (U) FY 2001 PLAN:

- (U) (\$957) ASPECTS: Develop interfaces for real time use of spectrum into communications and other C4ISR equipment based on the Navy operational EME to find available spectrum automatically to reduce incidences of interference to and from systems.
- (U) (\$466) BEES: Development of generic C4ISR system models. Apply conditional logic to selected additional models to replicate operational decision making as it relates to E3.
- (U) (\$296) Criteria and Test Procedures: Continue to investigate industrial standards (foreign and domestic) for conversion to military standards. Continue to incorporate new communications planning techniques.

B. (U) OTHER PROGRAM FUNDING SUMMARY:

(U) PE 0702827N, AGSAG 4B7N	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
	3,410	2,829	2,389	2,501	3,391	2,346	2,402

(U) Related RDT&E: Not applicable.

C. (U) ACQUISITION STRATEGY: Not applicable.

D. (U) SCHEDULE PROFILE: Not applicable.

UNCLASSIFIED

EXHIBIT R-3, RDT&E,N Project Cost Analysis DATE: FEB 2000
 PROGRAM ELEMENT: 0605866N PROJECT NUMBER: X0706

BUDGET ACTIVITY: 6

Exhibit R-3 Cost Analysis (page 1)		PROGRAM ELEMENT				PROJECT NAME AND NUMBER					
APPROPRIATION/BUDGET ACTIVITY		Performing Activity & Location	FY 99 Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Cost Categories	Contract Method & Type										
Subtotal Product Development											
Remarks:											
ASPECTS/EMCAP Development	Various	Various	3433	TBD	957	TBD	957	TBD	Cont.	Cont.	Cont.
E3 Analysis Tool Development	Various	Various	3291	TBD	442	TBD	466	TBD	Cont.	Cont.	Cont.
Specifications and Standards	Various	Various	1703	TBD	248	TBD	296	TBD	Cont.	Cont.	Cont.
Subtotal Support			8427		1647		1719		Cont.	Cont.	Cont.
Remarks											

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EXHIBIT R-3, RDT&E,N Project Cost Analysis

DATE: FEB 2000

PROGRAM ELEMENT: 0605866N

PROJECT NUMBER: X0706

BUDGET ACTIVITY: 6

Exhibit R-3 Cost Analysis (page 2)						Date: Feb 00					
APPROPRIATION/BUDGET ACTIVITY			PROGRAM ELEMENT			PROJECT NAME AND NUMBER					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total Pys Cost	FY 99 Award Date	FY 00 Cost	FY 00 Award Date	FY 01 Cost	FY 01 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Subtotal T&E											
Remarks:											
Subtotal Management											
Remarks											
Total Cost			8427	751	1647	1719	Cont.	Cont.	Cont.	Cont.	Cont.

R-1 Shopping List - Item No 148-10 of 148-10

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Exhibit R-3, RDT&E,N Project Cost Analysis

Exhibit R-2, RDT&E Budget Item Justification										Date: February 2000
R-1 ITEM NOMENCLATURE										Space and Electronic Warfare Surveillance/ Reconnaissance Support
APPROPRIATION/BUDGET ACTIVITY										
RDT&E,N										
Activity 6										
COST (\$ in Millions)	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	Cost to Complete	Total Cost
Total PE Cost	10.311	15.685	12.058	12.694	12.884	13.184	13.450	13.964	CONT	CONT
Z1034 Tac Sat Recon Ofc	9.452	14.619	10.474	12.444	12.629	12.914	13.180	13.494	CONT	CONT
R2007 Space Management Support	.859	1.066	1.584	.250	.255	.270	.270	.470	CONT	CONT
Project C Name/No. & subtotal cost										
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0		

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Established to exploit all National and Selected Service sensor systems to improve tactical support to fleet operational commanders. Project also supports fleet exercises, which provide the venue for testing modifications to existing programs and being made aware of new requirements. Additional detailed information is available at a higher level of classification.

(U) Z1034: Established to exploit all National and Service sensor systems to improve tactical support to fleet operational commanders. Project also supports fleet exercises, which provide the venue for testing modifications to existing programs and being made aware of new requirements.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

- (U) FY 1999 PLAN:
 - (U) (\$.439) Joint Exercises/Training
 - (U) (\$ 2.049) Support to TBMD
 - (U) (\$ 5.122) Support to Littoral/Expeditionary Warfare
 - (U) (\$ 5.560) Precision Strike/Mission Planning
 - (U) (\$ 1.451) Improved Data Dissemination/Exploitation
- (U) FY 2000 PLAN:
 - (U) (\$.314) Joint Exercises/Training
 - (U) (\$ 1.466) Support to TBMD
 - (U) (\$ 3.666) Support to Littoral/Expeditionary Warfare
 - (U) (\$ 3.981) Precision Strike/Mission Planning
 - (U) (\$ 1.047) Improved Data Dissemination/Exploitation

R-1 SHOPPING LIST - 149-1 of 149-3

3. (U) FY 2001 PLAN:

- (U) (\$.373) Joint Exercises/Training
- (U) (\$1.741) Support to TBMD
- (U) (\$4.356) Support to Littoral/Expeditionary Warfare
- (U) (\$4.730) Precision Strike/Mission Planning
- (U) (\$1.244) Improved Data Dissemination/Exploitation

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project provides resources to the Naval Space Command (NAVSPACECOM) for the conduct of its support testing. NAVSPACECOM is tasked with providing space support to fleet units worldwide, while also planning and coordinating future support system analysis, requirements, architectural and feasibility studies, technical demonstrations and prototype system development for concepts to provide space support to the fleet warfighter.

(U) R2007: The project provides resources to the Naval Space Command (NAVSPACECOM) for the conduct of its support testing.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1999 PLAN:

- (U) (\$.174) Demonstrated prototype output interfaces for Remote Earth Sensing Information Center/Hyper Spectral Imagery (RESIC/HSI) data
- (U) (\$.052) Developed low data rate Satellite Communication alternatives
- (U) (\$.155) Demonstrated real-time application of National Systems data
- (U) (\$.122) Integrated Theater Ballistic Missile warning data into Joint Tactical Ground Stations (JTAGS) environment
- (U) (\$.134) Demonstrated expanded Kalman filtering against low orbit data
- (U) (\$.290) Investigated numerically intensive database applications in space control context
- (U) (\$.139) Analyzed the process used to resolve Uncorrelated Targets within the NAVSPACECOM mission system

2. (U) FY 2000 PLAN:

- (U) (\$.391) Develop HSI production techniques

R-1 SHOPPING LIST - 149-2 of 149-3

- (U) (\$.381) Integrate JTAGS into GCCS product delivery

- (U) (\$.281) Demonstrate advanced processing for orbit analyst support
- (U) (\$.181) Prototype Kalman Filtering against low orbit objects
- (U) (\$.150) Study advanced space communications techniques
- (U) (\$.200) Demonstrate National System data integration

3. (U) FY 2001 PLAN:

- (U) (\$.250) Study transition issues for Multi Mission Mobile Processor (SBIR) implementation

(U) JUSTIFICATION FOR BUDGET ACTIVITY: This program is funded under Budget Activity 6 because it supports the operations and installations required for general research and development use.

B. Program Change Summary:

(U) Funding: R2007: FY1999 adjustments due to (-0.026) SBIR/STTR Transfer, (-0.094) Execution Adjustment. FY2000 adjustments (-0.009) due to Congressional Rescissions. FY2001 adjustments (-1.348) Program Adjustment, (-0.002) Various Rate Adjustments. Z1034: FY1999 adjustments due to (+3M) Congressional Adjustment, (-0.010) CIVPERS Under execution, (-0.041) FFRDC Distribution, (-0.028) Revised Economic Assumptions, (-0.216) Program Decrease, (-0.007) Revised Economic Assumption, (-0.077) FY01 President Budget Adjustment. FY2000 adjustments (-1.580) due to DON/FMB Adjustment, (-0.152) Non-Pay Inflation Adjustment, (-0.002) Working Capital-NAWC, (+0.013) Civilian Pay Rates, (-0.054) FY01 President Budget Adjustment. FY2001 adjustments (-0.200) Non-Pay Inflation Adjustments, (+0.024) Civilian Pay Rates, (+0.150) PR01 Issue, (-0.029) NWCFC Rate Changes, (-0.091) FY01 President Budget Adjustment.

C. Other Program Funding Summary N/A

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE								
BUDGET ACTIVITY		February 2000								
6 - Management Support		0605873M Marine Corps Program Wide Support								
PE NUMBER AND TITLE		0605873M Marine Corps Program Wide Support								
		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
	COST (in Millions)									
	Total Program Element (PE) Cost	8187	10936	8091	8136	8084	8726	9669	Continuing	Continuing
C0030	Marine Corps Studies and Analysis	3632	7343	4833	4978	5127	5378	5490	Continuing	Continuing
C0033	Marine Corps Operational Testing & Evaluation Activity	2595	2155	2019	2212	2203	2376	2432	Continuing	Continuing
C2330	Chemical Biological Consequence Management	1960	1438	1239	946	754	972	1747	Continuing	Continuing
	Quantity of RDT&E Articles									
<p>(U) Mission Description and Budget Item Justification: This program element (PE) provides the analytical foundation for the Marine Corps Studies System (MCSS), including mandated Mission Area Analyses and Cost and Operational Effectiveness Analyses. The MCSS is the front end of the Marine Corps' acquisition system, supporting the Concepts Based Requirements Systems and Combat Development Process. In addition, the PE supports Marine Corps Operational Test and Evaluation (OT&E) Activities.</p> <p>(U) Justification for Budget Activity: This program is funded under RDT&E MANAGEMENT SUPPORT because it supports the operations and installation required for general research and development use.</p>										

R-1 Line Item 150

Budget Item Justification

(Exhibit R-2, Page 1 of 9)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE						
BUDGET ACTIVITY		PROJECT						
6 - Management Support		C0030						
PE NUMBER AND TITLE		0605873M Marine Corps Program Wide Support						
COST (In Millions)		Total Cost						
FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Continuing
3632	7343	4833	4978	5127	5378	5490	Continuing	Continuing
Marine Corps Studies and Analysis								
Quantity of RDT&E Articles								

R-1 Line Item 150
Budget Item Justification
(Exhibit R-2, Page 2 of 9)

UNCLASSIFIED

A. (U) Mission Description and Budget Item Justification:

(U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This project funds the general studies and analysis portion of the Marine Corps Studies System (MCSS) and provides the analytical foundation for the Marine Corps Studies System (MCSS). As such, the MCSS is the front end of the Marine Corps' acquisition system which supports the Concepts Based Requirements Process (CBRP) and the Combat Development Process (CDP). The project funds a variety of studies and analyses approved for execution in the annual Marine Corps Studies Master Plan (MCSMP) to include: mandated Mission Area Analyses (MAAs), Milestone I (Conceptual) Analysis of Alternatives (AoAs), technology assessments; force structure analysis; weapons systems analysis; concept development and analysis; cost benefit analysis; training assessments; feasibility analysis; scenario development; and other analyses in support of the Program Objective Memorandum (POM) initiatives. The Marine Corps restructured and refocused its mission area analysis program in FY97 for implementation in FY98. This new MAA process is designed to provide quantitative and qualitative information to decision makers on which to base decisions effecting improvements in operational concepts, doctrine, force structure, education, training, and procurement. The MCSS also provides analytical support for decision makers related to the resolution of current problems identified by the operating forces. Commencing in FY 2000, this project will also fund all Milestone 0/Phase 0 activities (Analysis of Alternatives AoA's). This project also funds for the Human Effects Advisory Panel. The Joint Non-Lethal Weapons Directorate contracts with Penn State University to assemble a panel of experts to provide independent oversight to DoD Lethal Weapons Program. This panel of experts review all data concerning effects of non-lethal weapons on humans and provide recommendations for improvement of models and characterization methods.

(U) FY 1999 Accomplishments:

- (U) \$ 1,091 Initiated and completed three new Mission Area Analyses: an MAA on a Small Scale Contingency for a Sea Lane of Communications (SLOC) Scenario; an MAA on Military Operations in Urban Terrain (MOUT); and an MAA on a Marine Expeditionary Force (MEF) in a Major Theater of War (MTW).
- (U) \$ 478 Funded the continuation of 3 ongoing FY 1998 study and analysis projects: Quality of Life for USMC; MV-22 Student Undergraduate Pipeline Training and Fleet Replacement Squadron; and the Impact to Warfighting Capability Through the MV-22 Transition.
- (U) \$ 743 Initiated two Analyses of Alternatives, approved in the MCSMP.
- (U) \$ 1320 Executed 5 to 7 high priority study and analysis projects approved in the FY 1999 MCSMP. Provided general support (TAD, printing, supplies & material) in support of studies conducted under the auspices of the MCSS.

(U) Total \$ 3,632

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2000**

PROJECT
C0030

PE NUMBER AND TITLE
0605873M Marine Corps Program Wide Support

BUDGET ACTIVITY

6 - Management Support

(U) FY 2000 Planned Program:

- (U) \$ 1093 Initiate and complete four new Mission Area Analyses: LHA Replacement, Operational Maneuver From the Sea (OMFSTS), Operational Reach, (1) TBD and initiate one new MAA for completion in FY 2001.
 - (U) \$ 1620 Execute the high priority study and analysis projects approved in the FY 2000 MC Studies Master Plan: AAAV Historical Perspectives, 2001-2010 Casualty Rate, Joint Strike Fighter, Chem-Bio Response at USMC installations, Operational employment of the MV-22, Medical Prime Vendor, as well as two additional studies to be determined.
 - (U) \$ 894 Continue and complete ongoing FY 1999 study and analysis projects: Training Pipeline Flow, Anti-Armor Study Mix, Functional Assessment-Decision Making, Range Management, Aviation Logistics, War Material Requirements (Class V) Determination.
 - (U) \$ 1747 Conduct high priority Milestone 0/Phase 0 activities for emerging requirements, complete the Combat Identification AoA, and initiate the Unit Operations Center (UOC) AoA plus one AoA to be determined during this fiscal year. Starts an additional AOA to be determined for completion in FY 2001.
 - (U) \$ 1989 Continue health effects research and modeling & simulation to answer questions raised by the Non-Lethal Weapons Human Effects Advisory Panel (HEAP).
- (U) Total \$ 7343

(U) FY 2001 Planned Program:

- (U) \$ 1169 Initiates and completes three Mission Area Analyses. Specific MAAs to be addressed are normally identified during the MAA review during mid FY 2000.
 - (U) \$ 890 Continues and completes one FY 2000 AoA and initiate 2 new AoAs. Estimate one of the new AoAs will be completed this fiscal year.
 - (U) \$ 680 Continues an estimated 4 to 5 ongoing FY 2000 study and analysis projects.
 - (U) \$ 1394 Executes the high priority study and analysis projects approved in the FY 2001 MCSMP.
 - (U) \$ 700 Conducts high priority Milestone 0/Phase 0 activities for emerging requirements.
- (U) Total \$ 4833

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
	3174	4584	4876
	458	2759	-43
	3632	7343	4833

B. (U) Project Change Summary

- (U) Previous President's Budget
- (U) Adjustments to Previous President's Budget
- (U) Current Budget Submit

(U) Change Summary Explanation:

(U) Funding: FY99 Funding includes a decrease of (\$-45K) for a SBIR tax assessment, increase in the amount of \$503K due to reauthorization of programs with in the Marine Corps. FY00 additional funding of \$2759K due to reauthorization of programs (\$770K) and a Congressional Plus up of \$1.989M for HEAP. FY01 decrease of \$43K is due to minor affordability adjustments.

(U) Schedule: N/A

R-1 Line Item 150

Budget Item Justification

(Exhibit R-2, Page 3 of 9)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE	February 2000
BUDGET ACTIVITY	PROJECT		
6 - Management Support	C0030		
(U) Technical: N/A			
C. (U) Other Program Funding Summary			
(APPN, BLI #, NOMEN)			
(U) Not Applicable			
(U) Related RDT&E: PE 0605154N (Center for Naval Analyses (CNA), Project C0031 (Marine Corps Operations Analysis Group)			
D. (U) Schedule Profile: Not Applicable.			
		To	Total
		Compl	Cost
R-1 Line Item 150		Budget Item Justification	

(Exhibit R-2, Page 4 of 9)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		DATE		February 2000						
BUDGET ACTIVITY		PE NUMBER AND TITLE		PROJECT						
6 - Management Support		0605873M Marine Corps Program Wide Support		C0033						
COST (In Millions)		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C0033 Marine Corps Operational Testing & Evaluation Activity		2595	2155	2019	2212	2203	2376	2432	Continuing	Continuing
Quantity of RDT&E Articles										
<p>A. (U) Mission Description and Budget Item Justification: This program supports the Marine Corps Operational Test and Evaluation (OT&E) Activity (MCOTEA) representatives for Marine Corps OT&E and OT&Es performed by Fleet Marine Force Commanders and Technical Support Activities. This program also provides for OT&E of systems prior to procurement by the Marine Corps to include test planning, operational testing, and Independent Evaluation Report (IER) preparation.</p> <p>(U) FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • (U) \$ 827 MCOTEA: Provided for organizational salaries. • (U) \$ 375 MCOTEA: Provided for organizational support and utilities. • (U) \$ 425 Advanced Field Artillery Tactical Data System (AFATDS): Conducted Initial Operational Test & Evaluation (IOT&E) and published IER. • (U) \$ 134 Mobile Electronic Warfare Support System (MEWSS): Concluded MOT&E and published IER. • (U) \$ 49 Technical Control and Analysis Center (TCAC PIP): Conducted IOT&E and published IER. • (U) \$ 232 Team Portable Collection System (TPCS): Conducted IOT&E and published IER. • (U) \$ 40 AN/PSC 5 Manpack VHF Satcom Terminal (AN/PSC5): Conducted FOT&E and published IER. • (U) \$ 355 Target Location, Designation, and Hand-off (TLDHS): Conducted an Operational Test (OT). • (U) \$ 125 Short Range Assault Weapon (SRAW): Conducted OT. <p>(U)Total\$ 2595</p> <p>(U) FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • (U) \$ 1047 MCOTEA: Provides for organizational salaries. • (U) \$ 780 MCOTEA: Provides for organizational support and utilities. • (U) \$ 274 Medium Tactical Vehicle Replacement (MTVR): Conduct Initial Operational Assessment/Test. • (U) \$ 54 Light NBC Reconnaissance System (LNBCRS): Conduct and publish Developmental Test Plan (DTP) for IOT&E. <p>(U)Total \$ 2,155</p>										

R-1 Line Item 150

Budget Item Justification

(Exhibit R-2, Page 5 of 9)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE February 2000

BUDGET ACTIVITY

PE NUMBER AND TITLE

PROJECT

6 - Management Support

0605873M Marine Corps Program Wide Support

C0033

(U) FY 2001 Planned Program:

- (U) \$ 1,121 MCOTE A: Provides for organizational salaries.
- (U) \$ 608 MCOTE A: Provides for organizational support and utilities.
- (U) \$ 44 Non Lethal Vehicle Stopper (NLVS): Conduct IOT&E.
- (U) \$ 164 Maritime Positioning Force-Enhanced (MPF(E)): Conduct IOT&E.
- (U) \$ 82 Target Locator Designated Handoff System (TLDHS): Conduct IOT&E.
- (U) Total \$ 2,019

B. (U) Project Change Summary

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
(U) Previous President's Budget	1990	2167	2129	2236	2208	2390	2444
(U) Adjustments to Previous President's Budget	605	-12	-110	6	-5	-14	-12
(U) Current Budget Submit	2595	2155	2019	2212	2203	2376	2432

(U) Change Summary Explanation:

(U) Funding: FY99 Changes due to re-prioritization of programs with the Marine Corps and minor Affordability adjustments. FY00-05 change due to minor affordability adjustments.

(U) Schedule: N/A

(U) Technical: N/A

(V)

C. (U) Other Program Funding Summary
(APPN, BLI #, NOMEN)

	FY 1999	FY 2000	FY 2001	To Compl	Total Cost
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(U) Not Applicable

(U) Related RDT&E: Not Applicable.

D. (U) Schedule Profile: Not Applicable.

R-1 Line Item 150

Budget Item Justification

(Exhibit R-2, Page 6 of 9)

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BUDGET ACTIVITY		RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)										DATE	PROJECT
		6 - Management Support										February 2000	C2330
COST (In Millions)		PE NUMBER AND TITLE										0605873M Marine Corps Program Wide Support	
		FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost			
C2330	Chemical Biological Consequence Management	1960	1438	1239	946	754	972	1747	Continuing	Continuing			
	Quantity of RDT&E Articles												
<p>A. (U) Mission Description and Budget Item Justification: This project includes improvements in all areas of the Chemical Biological Incident Response Force inclusive to its commodity areas of reconnaissance, decontamination, emergency medical support, communications and general support and force protection.</p> <p>(U) FY 1999 Accomplishments:</p> <ul style="list-style-type: none"> • (U) \$ 590 Continued development of Electrostatic Decontamination System that uses statically charged mist to decontaminate personnel and equipment. • (U) \$ 120 Began research and development of M40 Powered Air Purifying Respirators (PAPR). • (U) \$ 22 Began research and development of Improved Level A Communications for responders wearing OSHA Level A protection. • (U) \$ 20 Began research and development of Modified Protective Mask Drinking Tube. • (U) \$ 377 Began research and development of the Non-Specific Immune Defence Program to provide protection against disease caused by Biological Warfare Agents. • (U) \$ 184 Completed development and testing of NBC Hand-Held Portable Detector to provide a portable, means of detecting radiological and chemical hazards. • (U) \$ 647 Began research and development of the Electro-Chemical Decontamination Solution which is an environmentally safe chem/bio decon solution. <p>(U) Total \$ 1960</p> <p>(U) FY 2000 Planned Program:</p> <ul style="list-style-type: none"> • (U) \$ 333 Continue research and development of the Electro-Chemical Decontamination Solution which is an environmentally safe chem/bio decon solution. • (U) \$ 50 Continue and complete research and development of Electrostatic Decontamination System that uses statically charged mist to decontaminate personnel and equipment. • (U) \$ 200 Continue research and development of Improved Level A Communications for responders wearing OSHA Level A Protection. 													

R-1 Line Item 150

Budget Item Justification

(Exhibit R-2, Page 7 of 9)

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE **February 2000**

PROJECT
C2330

PE NUMBER AND TITLE

0605873M Marine Corps Program Wide Support

BUDGET ACTIVITY

6 - Management Support

- (U) \$ 100 Begin research and development of the Level A Pass-Thru for the Self Contained Breathing Apparatus to enable the Marine to stay in Level A suits while changing air cylinders.
- (U) \$ 105 Begin Product Improvement of the Field Rugged Gas Chromatography/Mass Spectrometer (GC/MS)
- (U) \$ 100 Begin research and development of NBC Simulated Training Kits.
- (U) \$ 400 Continue and complete research and development of Powered Air Purifying Respirators (PAPR).
- (U) \$ 50 Continue research and development of Modified Protective Mask Drinking Tube.
- (U) \$ 100 Begin research and development of the Chem-Bio Search and Rescue Equipment.
- (U)Total \$ 1,438

(U) FY 2001 Planned Program:

- (U) \$ 150 Continue research, development and testing of the Electro-Chemical Decontamination Solution.
- (U) \$ 100 Complete research and development of the Level A Pass-Thru for the Self-Contained Breathing Apparatus.
- (U) \$ 200 Continue development of the Chem-Bio Search & Rescue Equipment.
- (U) \$ 189 Complete Improvement of the Field Rugged GC/MS.
- (U) \$ 200 Complete development of the NBC Simulated Training Kits.
- (U) \$ 150 Begin research and development of the Foam Mitigation System which is used to reduce explosion of chem/bio weapons.
- (U) 100 Complete research and development of Improved Level A Communications for responders wearing OSHA Level A Protection.
- (U) 50 Complete research, development and testing of Modified Protective Mask Drinking Tube.
- (U) 100 Begin research and development of the Containerized Assembled Wash Facility (CAWF) used for large equipment decontamination.
- (U)Total \$ 1,239

B. (U) Project Change Summary

	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>
(U) Previous President's Budget	7759	1447	1250
(U) Adjustments to Previous President's Budget	-5799	-9	-11
(U) Current Budget Submit	1960	1438	1239

(U) Change Summary Explanation:

R-1 Line Item 156

Budget Item Justification

(Exhibit R-2, Page 9 of 9)

UNCLASSIFIED

DATE February 2000

PE NUMBER AND TITLE
0605873M Marine Corps Program Wide Support

BUDGET ACTIVITY
6 - Management Support

- (U) FY 99 Adjustments:
- (U) Funding:
- Decrease of \$177K for SBIR Tax Assessment
- Increase in the amount of \$728K due to reprioritization of programs within the Marine Corps.
- Decrease of \$6,338K due to reprogramming of Small Unit Bioreactor and ChemBio Individual Sampler to Chem Bio Defense Budget Activity 3, Advanced Technology Development PE Number 0603384BP.

- (U) FY 00 Adjustments:
- (U) Funding:
- Decrease of \$9K for General Reduction.
- (U) FY 01 Adjustments:
- (U) Funding:
- Decrease of \$11K for PBD604 and Non-Purchase Inflation adjustments

- (U) Schedule: Not Applicable.
- (U) Technical: Not Applicable.

C. (U) Other Program Funding Summary
 (APPN, BLI #, NOME#)

	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To Compl	Total Cost Cont.
(U) PMC Line (BLI# 652200) Field Medical	2179	7889	1914	1343	956	4215	5342		

(U) Related RDT&E

D. (U) Schedule Profile: Not Applicable