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NAVAL MATERIAL COMMAND WASHINGTON DC
NAVY TECHNOLOGY TRANSFER PROGRAM FY 79 SUMMARY STATISTICS.(U)
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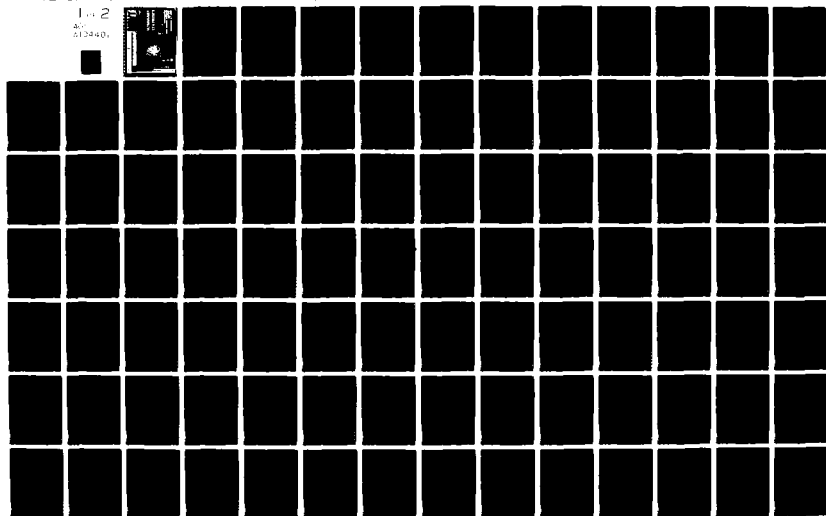
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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
	AD-A204402	
4. TITLE (and Subtitle)	5. TYPE OF REPORT & PERIOD COVERED	
Navy Technology Transfer Program FY 79 Summary Statistics	Annual FY 1979 Repts	
6. PERFORMING ORG. REPORT NUMBER		
7. AUTHOR(s)		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
Headquarters Naval Material Command (MAT 078) Washington, DC 20360		65804N 20835-SL
11. CONTROLLING OFFICE NAME AND ADDRESS		12. REPORT DATE
(16) Z 0835		(11) 1980
13. NUMBER OF PAGES		14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)
1 Vol.		(12) Z 83
15. SECURITY CLASS. (of this report)		16. DISTRIBUTION STATEMENT (of this Report)
UNCLASSIFIED		DISTRIBUTION STATEMENT Approved for public release; Distribution Unlimited
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
Cleared for public release; Distribution unlimited		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
Navy; Technology Transfer		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number)		
This book summarizes the 261 projects, which the Navy undertook in FY 1979 for sponsors from federal agencies (includes DOI), state and local governments, industry and small businesses, and non-profit institutions. The Program also provided unique services not in competition with the private sector. The book's scope does not encompass controls or foreign technology transfer in any sense.		

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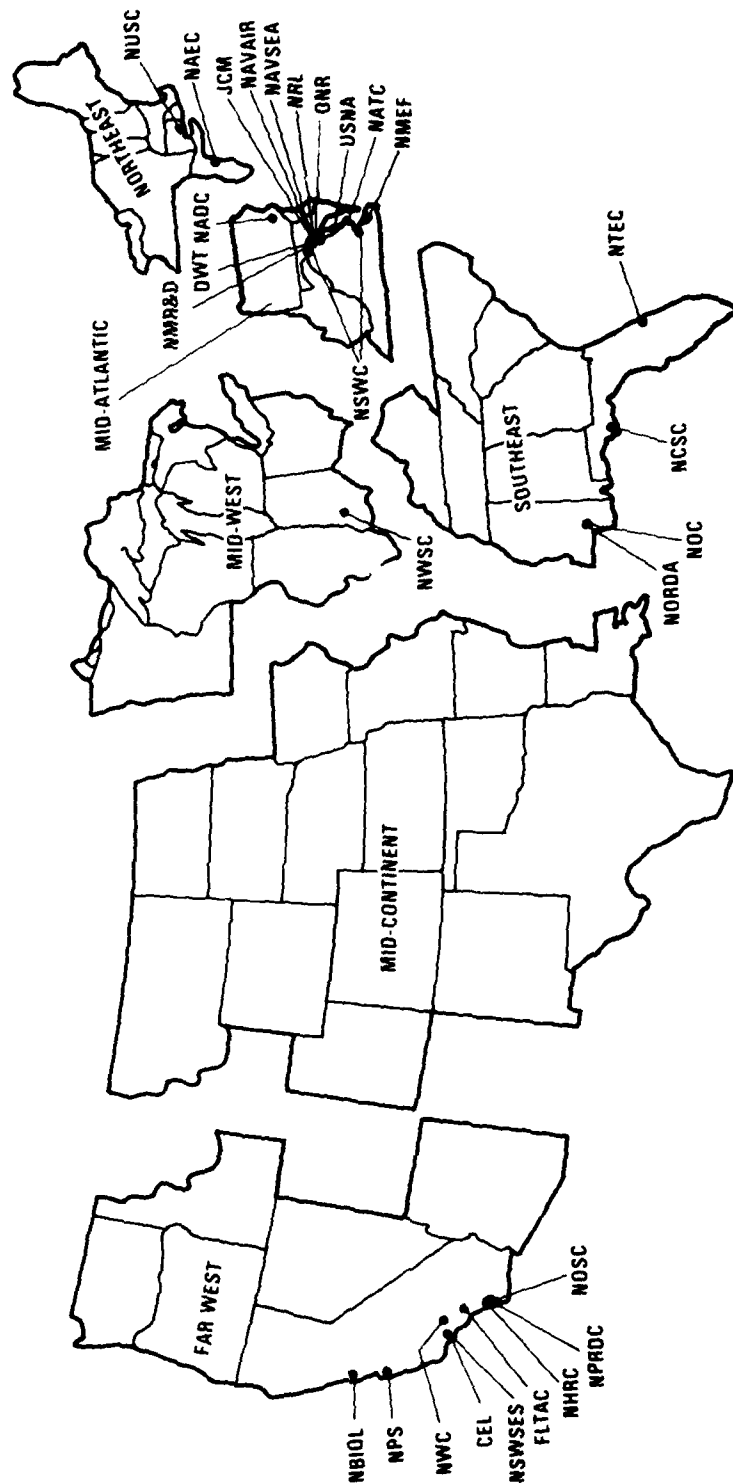
EDITION OF 1 NOV 65 IS OBSOLETE
S/N 0102-LF-014-6601UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

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FY 1979 TECHNOLOGY TRANSFER PROJECTS--BY GEOGRAPHICAL AREA

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REGION	NUMBER OF PERFORMING ACTIVITIES	NUMBER OF PROJECTS
Far West	9	93
Mid-Continent	--	--
Mid-West	1	2
Northeast	2	11
Mid-Atlantic	12	117
Southeast	4	38



FOREWORD

This publication provides details about the FY 1979 Navy Technology Transfer Program. The contents of the book are derived from the reports submitted by Navy activities engaged in technology transfer. These reports also are the basis for the annual report to the Secretary of the Navy required by SECNAVINST 5700.14 and OPNAVINST 5700.13.

This book summarizes the 261 projects, which the Navy undertook in FY 1979 for sponsors from federal agencies (includes DOD), state and local governments, industry and small businesses, and nonprofit institutions. The program also provided unique services not available from the private sector and not in competition with the private sector. The book's scope does not encompass export controls or foreign technology transfer in any sense.

The Navy instituted a formal Technology Transfer Program in 1972, as a result of successful experimental technology transfer programs organized in the late 1960s and early 1970s. The program is chartered "to establish a systematic and comprehensive policy for the transfer of appropriate technology...to the civilian sector and for the identification and cooperative development of coming technologies of both military and civilian interest." The Technology Transfer Program has been oriented toward local government and the public sector, in general, and is now also emphasizing programs for small business and industry in cooperation with such organizations as the Department of Commerce and the National Science Foundation.

Substantial benefits were realized through this program during FY 1979. New product markets were opened, for example, by transferring ocean farm technology to industry. The Technology Transfer Program enhanced the improvement of existing products and processes and promoted standardization. The Government-Industry Data Exchange Program documented savings of over \$24 million in cost avoidance by American industry in Calendar Year 1978. Navy technology transfer included such fundamental and important areas as firefighting, medical, and pollution abatement technology to the civilian sector. Results were constructive and illustrated the continuing potential of the Navy Technology Transfer Program.

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SECTION 1

HOW TO USE THIS BOOK

This section acquaints the reader with the other major sections of the book, noting information that the reader can obtain from each section and alerting the reader to any idiosyncracies of the information.

An internal table of contents appears at the beginning of each major section of the document (with the exceptions of Appendices A and C). These internal tables of contents itemize information available in the larger sections.

Changes have been made to increase the amount of information accessed to the reader. Comments, criticisms, or suggestions for further improvements are strongly encouraged and should be forwarded to MAT 078.

Section 2: FY 1979 Technology Transfer Summary Statistics

This section provides a condensed statistical overview of the Navy Technology Transfer Program. The tables organize the data by type of sponsor, individual sponsors, technological area, and performing activity.

The number of projects in tables that are organized around individual sponsors will be higher than the actual total, since joint sponsors received credit as if each had individually sponsored the project.

Section 3: FY 1979 Technology Transfer Projects, Listed by Technological Area

Section 3 lists all reported technology transfer projects by the technological area that best describes the project. Projects are loosely grouped within technological area by type of sponsor (federal first, state and local, industry and small business, and nonprofit institution). Details provided include: project description, a note on Navy technology applied, a progress report, and funding and man-year levels for FY 1979 and FY 1980 (estimated).

A '0' in funding or man-year columns can indicate a reported '0' or a nonresponse.

Technological area categories are generally self-explanatory. Technological guidance generally includes projects that offered across-the-technological-board advice on technological problems requiring solutions.

Section 4: FY 1979 Technology Transfer Projects, Listed by Performing Activity

Section 4 lists all technology projects by the particular laboratory or activity that undertook the project. Projects are listed under each activity alphabetically by technological area. Details provided include project description, a notation on Navy technology applied, progress report, and funding and man-year allocations for FY 1979 and FY 1980 (estimated).

A '0' in funding or man-year columns can indicate a reported '0' or a nonresponse.

Section 5: FY 1979 Inventions and Patents

This section describes all reported patent applications and granted patents for FY 1979, listing them alphabetically by technological areas (same as those used in Section 3). Details include the patent application or patent number, purpose of the patent, and potential commercial applications.

INDEX 1: FY 1979 Technology Transfer Projects, Indexed by Sponsors

The index is keyed to Sections 5 and 6, which list all reported technology transfer projects by technological area and performing activity, respectively.

The index alphabetically lists individual sponsors within type-of-sponsor categories (federal, state and local, industry and small business, nonprofit institution). The index indicates which pages contain projects funded by individual sponsors.

Appendix A: Navy Technology Transfer Focal Points

Appendix A lists Navy activities participating in the Technology Transfer Program and provides addresses and phone numbers (commercial and Autovon) for all activities.

This appendix also identifies each activity's Technology Transfer Focal Point, who is the person to contact for further information about the activity's technology transfer projects/capabilities.

Names of activities in this section are current.

Appendix B: FY 1979 Technology Transfer Projects, List of Sponsors

Appendix B identifies all sponsors of FY 1979 technology transfer projects, alphabetically listing them within type-of-sponsor categories (federal, state and local, industry and small business, nonprofit institution).

Appendix C: Abbreviations and Acronyms

Appendix E notes all abbreviations and acronyms used in this document and provides the corresponding complete names.

Abbreviations are listed alphabetically by their abbreviated form.

SECTION 2

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SECTION 2

TABLE 1

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSORS	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
	Analysis and Testing	36	5891	5253	49.3	45.2
	Communications	17	2606	2750	31.7	26.9
	Computer Technology	14	3132	3380	29.3	26.7
	Energy	22	2901	2156	26.5	25.9
	Environment	16	1225	932	14.4	9.5
	Fire and Safety	8	201	199	2.4	2.1
	General Assistance	9	250	255	1.9	1.5
	Health and Medicine	23	946	1212	14.2	6.8
	Instrumentation	19	1678	1134	16.9	11.4
	Law Enforcement	3	1282	2150	4.2	7.0
	Marine Technology	13	892	657	9.0	4.8
	Technological Guidance	10	3360	2985	34.0	34.2
	Transportation	17	5774	19750	37.4	26.3
	SUBTOTAL:	207	30138	42813	271.2	228.3

SECTION 2

TABLE 1

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND TECHNOLOGICAL AREA

FOREIGN SPONSORS

<u>TECHNOLOGICAL AREA</u>	<u>NUMBER OF PROJECTS</u>	<u>FUNDING (\$K)</u>		<u>MAN-YEARS</u>	
		<u>FY79</u>	<u>FY80</u>	<u>FY79</u>	<u>FY80</u>
Energy	1	0	0	0.0	0.0
Analysis and Testing	1	0	0	0.0	0.0
SUBTOTAL:	2	0	0	0.0	0.0

SECTION 2

TABLE 1

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND TECHNOLOGICAL AREA

INDUSTRY AND SMALL BUSINESS SPONSORS	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
	Analysis and Testing	12	418	119	1.5	1.4
	Health and Medicine	1	40	0	0.1	0.1
	Instrumentation	7	18	36	0.0	0.0
	Marine Technology	2	0	1	0.1	0.0
	General Assistance	<u>1</u>	<u>0</u>	<u>0</u>	<u>0.0</u>	<u>0.0</u>
	SUBTOTAL:	23	476	156	1.7	1.5

SECTION 2

TABLE 1

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND TECHNOLOGICAL AREA

NONPROFIT INSTITUTION SPONSORS

TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
Analysis and Testing	2	20	0	0.3	0.0
Health and Medicine	2	1	1	0.1	0.1
Technological Guidance	4	48	15	1.0	0.0
Marine Technology	2	12	0	0.2	0.0
Communications	1	0	0	0.0	0.0
Energy	2	0	0	0.0	0.0
Environment	1	15	0	0.0	0.0
General Assistance	<u>1</u>	<u>40</u>	<u>40</u>	<u>1.0</u>	<u>1.0</u>
SUBTOTAL:	15	136	56	2.6	1.1

SECTION 2

TABLE 1

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND TECHNOLOGICAL AREA

STATE AND LOCAL SPONSORS	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
	Environment	2	18	0	0.2	0.0
	Health and Medicine	2	0	0	0.1	0.1
	Instrumentation	1	0	1	0.0	0.0
	Technological Guidance	5	63	60	2.1	2.0
	General Assistance	1	20	20	0.3	0.3
	Marine Technology	1	51	0	1.0	0.0
	Computer Technology	1	0	0	0.0	0.0
	Fire and Safety	1	0	0	0.0	0.0
			152	82	3.7	2.4
	SUBTOTAL:	14				
	TOTAL:	261	30902	43107	279.2	233.3

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSORS

PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
Civil Engineering Laboratory	6	929	238	3.5	2.0
David W. Taylor Naval Ship Research and Development Center	23	5617	21073	34.1	34.6
Government-Industry Data Exchange Program	1	1700	2000	10.0	11.0
Joint Cruise Missiles Project Office	2	0	0	0.0	0.0
Naval Air Development Center	4	1331	420	8.0	1.6
Naval Air Engineering Center	2	46	47	1.5	1.5
Naval Air Systems Command	5	425	125	9.0	3.0
Naval Air Test Station	1	0	0	0.0	0.0
Naval Biosciences Laboratory, Naval Supply Center	3	173	30	3.5	0.8
Naval Coastal Systems Center	4	1812	2692	8.5	11.7
Naval Health Research Center	7	30	4	0.8	0.5
Naval Mine Engineering Facility	1	4	0	0.1	0.0
Naval Ocean Research and Development Activity	9	1648	1203	15.7	10.8
Naval Ocean Systems Center	19	3284	1949	29.9	16.0

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSORS (Continued)

PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
Naval Oceanographic Office	10	114	63	6.3	6.2
Naval Postgraduate School	3	33	0	0.4	0.0
Naval Research and Development Command	9	46	1071	6.2	4.5
Naval Research Laboratory	36	5272	6159	50.8	52.4
Naval Sea Systems Command	4	2930	2400	36.0	30.0
Naval Ship Weapons Engineering Station	3	46	50	1.0	1.0
Naval Surface Weapons Center	11	870	542	10.1	8.0
Naval Training Equipment Center	3	425	225	8.5	4.5
Naval Underwater Systems Center	1	0	0	0.0	0.0
Naval Weapons Center	20	2108	1620	12.8	10.9
Naval Weapons Support Center	2	0	0	0.0	0.0
Navy Personnel Research and Development Center	2	0	30	0.0	1.0
Office of Naval Research	14	834	873	14.1	16.3
U.S. Naval Academy	2	21	0	0.4	0.0
SUBTOTAL:	207	30138	42814	271.2	228.3

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

FOREIGN SPONSORS

PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
Naval Air Engineering	1	0	0	0.0	0.0
Naval Oceanographic Office	1	0	0	0.0	0.0
SUBTOTAL:	2	0	0	0.0	0.0

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

INDUSTRY AND SMALL BUSINESS SPONSORS

PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
David W. Taylor	1	4	95	0.1	0.9
Naval Health Research Center	1	40	0	0.1	0.1
Naval Ocean Systems Center	1	22	24	0.5	0.5
Naval Oceanographic Office	9	18	37	0.1	0.0
Naval Sea Systems Command	1	0	0	0.0	0.0
Naval Weapons Center	<u>10</u>	<u>392</u>	<u>0</u>	<u>0.9</u>	<u>0.0</u>
SUBTOTAL:	23	476	156	1.7	1.5

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

NONPROFIT INSTITUTION SPONSORS

PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
		FY79	FY80	FY79	FY80
David W. Taylor	1	10	0	0.1	0.0
Naval Health Research Center	3	1	1	0.1	0.1
Naval Ocean Systems Center	3	37	15	1.4	0.0
Naval Oceanographic Office	1	0	0	0.0	0.0
Naval Research Laboratory	2	40	40	1.0	1.0
Naval Underwater Systems Center	4	33	0	0.0	0.0
Naval Weapons Center	<u>1</u>	<u>15</u>	<u>0</u>	<u>0.0</u>	<u>0.0</u>
SUBTOTAL:	15	136	56	2.6	1.1

SECTION 2

TABLE 2

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TYPE OF SPONSOR AND PERFORMING ACTIVITY

STATE AND LOCAL SPONSORS	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
	Naval Health Research Center	1	0	0	0.1	0.1
	Naval Ocean Systems Center	2	54	0	1.1	0.0
	Naval Oceanographic Office	1	0	1	0.0	0.0
	Naval Postgraduate School	3	0	0	0.0	0.0
	Naval Underwater Systems Center	3	0	0	0.0	0.0
	Naval Weapons Center	2	18	0	0.2	0.0
	Navy Personnel Research and Development Center	1	60	60	2.0	2.0
U.S. Naval Academy		<u>1</u>	<u>20</u>	<u>20</u>	<u>0.3</u>	<u>0.3</u>
	SUBTOTAL:	14	152	81	3.7	2.4
	TOTAL:	261	30902	43107	279.2	233.3

SECTION 2

TABLE 3

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND TYPE OF SPONSOR

TECHNOLOGICAL AREA	TYPE OF SPONSOR	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Analysis and Testing	Federal	36	5891	5253	49.3	45.2
	Foreign	1	0	0	0.0	0.0
	Industry	12	418	119	1.5	1.4
	Nonprofit	2	20	0	0.3	0.0
	Subtotal	51	6329	5372	51.1	46.6
Communications	Federal	17	2606	2750	31.7	26.9
	Nonprofit	1	0	0	0.0	0.0
	Subtotal	18	2606	2750	31.7	26.9
Computer Technology	Federal	14	3132	3380	29.3	26.7
	State	1	0	0	0.0	0.0
	Subtotal	15	3132	3380	29.3	26.7
Energy	Federal	22	2901	2156	26.5	25.9
	Foreign	1	0	0	0.0	0.0
	Nonprofit	2	0	0	0.0	0.0
	Subtotal	25	2901	2156	26.5	25.9
Environment	Federal	16	1225	932	14.4	9.5
	Nonprofit	1	15	0	0.0	0.0
	State	2	18	0	0.2	0.0
	Subtotal	19	1258	932	14.6	9.5
Fire and Safety	Federal	8	201	199	2.4	2.1
	State	1	0	0	0.0	0.0
	Subtotal	9	201	199	2.4	2.1
General Assistance	Federal	9	250	255	1.9	1.5
	Industry	1	0	0	0.0	0.0
	Nonprofit	1	40	40	1.0	1.0
	State	1	20	21	0.3	0.3
	Subtotal	12	310	316	3.2	2.8

SECTION 2

TABLE 3

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND TYPE OF SPONSOR

TECHNOLOGICAL AREA	TYPE OF SPONSOR	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Health and Medicine	Federal	23	946	1212	14.2	6.8
	Industry	1	40	0	0.1	0.1
	Nonprofit	2	1	1	0.1	0.1
	State	2	0	0	0.1	0.1
	Subtotal	28	987	1213	14.5	7.1
Instrumentation	Federal	19	1678	1134	16.9	11.4
	Industry	7	18	36	0.0	0.0
	State	1	0	1	0.0	0.0
	Subtotal	27	1696	1171	16.9	11.4
Law Enforcement	Federal	3	1282	2150	4.2	7.0
	Subtotal	3	1282	2150	4.2	7.0
Marine Technology	Federal	13	892	657	9.0	4.8
	Industry	2	0	1	0.1	0.0
	Nonprofit	2	12	0	0.2	0.0
	State	1	51	0	1.0	0.0
	Subtotal	18	955	658	10.3	4.8
Technological Guidance	Federal	10	3360	2985	34.0	34.2
	Nonprofit	4	48	15	1.0	0.0
	State	5	63	60	2.1	2.0
	Subtotal	19	3471	3060	37.1	36.2
Transportation	Federal	17	5774	19750	37.4	26.3
	Subtotal	17	5774	19750	37.4	26.3
Total		261	30902	43107	279.2	233.3

SECTION 2

TABLE 4

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TYPE OF SPONSOR

PERFORMING ACTIVITY	TYPE OF SPONSOR	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Civil Engineering Laboratory	Federal	6	929	238	3.5	2.0
	Subtotal	6	929	238	3.5	2.0
David W. Taylor	Federal	23	5617	21073	34.1	34.6
	Industry	1	4	95	0.1	0.9
	Nonprofit	1	10	0	0.1	0.0
	Subtotal	25	5631	21168	34.3	35.5
Government-Industry	Federal	1	1700	2000	10.0	11.0
Data Exchange Program		1	1700	2000	10.0	11.0
Joint Cruise Missiles	Federal	2	0	0	0.0	0.0
Project Office		2	0	0	0.0	0.0
Naval Air Development Center	Federal	4	1331	420	8.0	1.6
	Subtotal	4	1331	420	8.0	1.6
Naval Air Engineering Center	Federal	2	46	47	1.5	1.5
	Foreign	1	0	0	0.0	0.0
	Subtotal	3	46	47	1.5	1.5
Naval Air Systems Command	Federal	5	425	125	9.0	3.0
	Subtotal	5	425	125	9.0	3.0
Naval Air Test Station	Federal	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Naval Biosciences Laboratory	Federal	3	173	30	3.5	0.8
	Subtotal	3	173	30	3.5	0.8
Naval Coastal Systems Center	Federal	4	1812	2692	8.5	11.7
	Subtotal	4	1812	2692	8.5	11.7
Naval Health Research Center	Federal	7	30	4	0.8	0.5
	Industry	1	40	0	0.1	0.1
	Nonprofit	3	1	1	0.1	0.1
	State	1	0	0	0.1	0.1
	Subtotal	12	71	5	1.1	0.8

SECTION 2

TABLE 4

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TYPE OF SPONSOR

PERFORMING ACTIVITY	TYPE OF SPONSOR	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Mine Engineering Facility	Federal	1	4	0	0.1	0.0
	Subtotal	1	4	0	0.1	0.0
Naval Ocean Research and Development Activity	Federal	9	1648	1203	15.7	10.8
	Subtotal	9	1648	1203	15.7	10.8
Naval Ocean Systems Center	Federal	19	3284	1949	29.9	16.0
	Industry	1	22	24	0.5	0.5
	Nonprofit	3	37	15	1.4	0.0
	State	2	54	0	1.1	0.0
	Subtotal	25	3397	1988	32.9	16.5
Naval Oceanographic Office	Federal	10	114	62	6.3	6.2
	Foreign	1	0	0	0.0	0.0
	Industry	9	18	37	0.1	0.0
	Nonprofit	1	0	0	0.0	0.0
	State	1	0	1	0.0	0.0
	Subtotal	22	132	100	6.4	6.2
Naval Postgraduate School	Federal	3	33	0	0.4	0.0
	State	3	0	0	0.0	0.0
	Subtotal	6	33	0	0.4	0.0
Naval Research and Development Command	Federal	9	486	1071	6.2	4.5
	Subtotal	9	486	1071	6.2	4.5
Naval Research Laboratory	Federal	36	5272	6159	50.8	52.4
	Nonprofit	2	40	40	1.0	1.0
	Subtotal	38	5312	6199	51.8	53.4
Naval Sea Systems Command	Federal	4	2930	2400	36.0	30.0
	Industry	1	0	0	0.0	0.0
	Subtotal	5	2930	2400	36.0	30.0
Naval Ship Weapon Systems Engineering Station	Federal	3	46	50	1.0	1.0
	Subtotal	3	46	50	1.0	1.0

SECTION 2

TABLE 4

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TYPE OF SPONSOR

PERFORMING ACTIVITY	TYPE OF SPONSOR	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Surface Weapons Center	Federal	11	870	542	10.1	8.0
		11	870	542	10.1	8.0
Naval Training Equipment Center	Federal	3	425	225	8.5	4.5
		3	425	225	8.5	4.5
Naval Underwater Systems Center	Federal	1	0	0	0.0	0.0
	Nonprofit	4	33	0	0.0	0.0
	State	3	0	0	0.0	0.0
	Subtotal	8	33	0	0.0	0.0
Naval Weapons Center	Federal	20	2108	1620	12.8	10.9
	Industry	10	392	0	0.9	0.0
	Nonprofit	1	15	0	0.0	0.0
	State	2	18	0	0.2	0.0
	Subtotal	33	2533	1620	13.9	10.9
Naval Weapons Support Center	Federal	2	0	0	0.0	0.0
		2	0	0	0.0	0.0
Navy Personnel Research and Development Center	Federal State	2	0	30	0.0	1.0
		1	60	60	2.0	2.0
		3	60	90	2.0	3.0
Office of Naval Research	Federal	14	834	873	14.1	16.3
		14	834	873	14.1	16.3
U.S. Naval Academy	Federal State	2	21	0	0.4	0.0
		1	20	21	0.3	0.3
		3	41	21	0.7	0.3
		Subtotal	41	21	0.7	0.3
Total		261	30902	43107	279.2	233.3

SECTION 2

TABLE 5

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TECHNOLOGICAL AREA

PERFORMING ACTIVITY	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Civil Engineering Laboratory	Energy	1	616	120	0.9	1.0
	Health and Medicine	1	138	83	1.2	0.8
	Marine Technology	1	50	0	0.4	0.0
	Transportation	3	125	35	1.0	0.2
	Subtotal	6	929	238	3.5	2.0
David W. Taylor	Analysis and Testing	10	891	717	8.8	7.3
	Computer Technology	1	400	700	2.0	4.0
	Energy	1	35	104	0.3	0.7
	Environment	5	749	590	7.9	5.9
	Fire and Safety	2	70	94	0.9	1.0
	Marine Technology	2	211	248	2.0	2.0
	Technological Guidance	3	175	315	2.4	4.6
	Transportation	1	3100	18400	10.0	10.0
	Subtotal	25	5631	21168	34.3	35.5
Government-Industry Data Exchange Program	Analysis and Testing	1	1700	2000	10.0	11.0
	Subtotal	1	1700	2000	10.0	11.0
Joint Cruise Missiles Project Office	Transportation	2	0	0	0.0	0.0
	Subtotal	2	0	0	0.0	0.0
Naval Air Development Center	Computer Technology	1	0	0	0.0	0.0
	Health and Medicine	1	26	0	2.4	0.0
	Instrumentation	1	350	0	2.0	0.0
	Technological Guidance	1	955	420	3.6	1.6
	Subtotal	4	1331	420	8.0	1.6
Naval Air Engineering Center	Analysis and Testing	2	46	47	1.5	1.5
	Environment	1	0	0	0.0	0.0
	Subtotal	3	46	47	1.5	1.5

SECTION 2

TABLE 5

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TECHNOLOGICAL AREA

PERFORMING ACTIVITY	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Air Systems Command	Communications	1	0	0	0.0	0.0
	Fire and Safety	1	0	0	0.0	0.0
	General Assistance	1	35	35	1.0	1.0
	Instrumentation	1	30	30	1.0	1.0
	Transportation	1	360	60	7.0	1.0
	Subtotal	5	425	125	9.0	3.0
Naval Air Test Center	Fire and Safety	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Naval Biosciences Laboratory	Environment	2	143	0	2.7	0.0
	Health and Medicine	1	30	30	0.8	0.8
	Subtotal	3	173	30	3.5	0.8
Naval Coastal Systems Center	Energy	1	300	152	4.0	2.5
	Environment	1	95	150	0.5	1.0
	Instrumentation	1	197	240	1.0	1.2
	Law Enforcement	1	1220	2150	3.0	7.0
	Subtotal	4	1812	2692	8.5	11.7
Naval Health Research Center	Health and Medicine	11	71	5	1.1	0.8
	Technological Guidance	1	0	0	0.0	0.0
	Subtotal	12	71	5	1.1	0.8
Naval Medical Research and Development Command	Health and Medicine	9	486	1071	6.2	4.5
	Subtotal	9	486	1071	6.2	4.5
Naval Mine Engineering Facility	Analysis and Testing	1	4	0	0.1	0.0
	Subtotal	1	4	0	0.1	0.0
Naval Ocean Research and Development Facility	Computer Technology	1	283	237	1.0	1.0
	Energy	1	300	75	2.0	1.0
	Instrumentation	6	1005	811	11.9	8.2
	Marine Technology	1	60	80	0.8	0.6
	Subtotal	9	1648	1203	15.7	10.8

SECTION 2

TABLE 5

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TECHNOLOGICAL AREA

PERFORMING ACTIVITY	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Ocean Systems Center	Analysis and Testing	4	400	124	4.0	1.5
	Communications	1	50	0	0.5	0.0
	Computer Technology	3	1254	611	12.3	5.0
	Environment	2	106	170	1.1	1.6
	Fire and Safety	1	15	0	0.2	0.0
	Health and Medicine	2	192	14	2.3	0.1
	Law Enforcement	1	12	0	0.2	0.0
	Marine Technology	6	568	329	5.6	2.2
	Technological Guidance	2	18	15	1.1	0.0
	Transportation	3	782	725	5.6	6.1
	Subtotal	25	3397	1988	32.9	16.5
Naval Oceanographic Office	Communications	1	0	0	4.0	4.0
	Computer Technology	1	32	32	1.0	1.0
	Energy	2	10	5	0.3	0.2
	Environment	1	22	22	1.0	1.0
	Instrumentation	13	68	40	0.0	0.0
	Marine Technology	4	0	1	0.1	0.0
	Subtotal	22	132	100	6.4	6.2
Naval Postgraduate School	Computer Technology	1	0	0	0.0	0.0
	Fire and Safety	1	0	0	0.0	0.0
	General Assistance	3	33	0	0.4	0.0
	Health and Medicine	1	0	0	0.0	0.0
	Subtotal	6	33	0	0.4	0.0
Naval Research Laboratory	Analysis and Testing	8	1042	1004	13.4	13.8
	Communications	9	2216	2630	21.0	20.9
	Computer Technology	2	434	1110	2.0	3.6
	Energy	9	1290	1405	14.1	14.0
	Fire and Safety	1	0	0	0.0	0.0
	General Assistance	3	40	40	1.0	1.0
	Health and Medicine	1	30	10	0.3	0.1
	Instrumentation	2	0	0	0.0	0.0
	Marine Technology	1	0	0	0.0	0.0
	Technological Guidance	1	0	0	0.0	0.0
	Transportation	1	260	0	0.0	0.0
	Subtotal	38	5312	6199	51.8	53.4

SECTION 2

TABLE 5

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TECHNOLOGICAL AREA

PERFORMING ACTIVITY	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Sea Systems Command	General Assistance	1	0	0	0.0	0.0
	Technological Guidance	3	2230	2250	28.0	28.0
	Transportation	1	700	150	8.0	2.0
	Subtotal	5	2930	2400	36.0	30.0
Naval Ship Weapons Systems Engineering Station	Instrumentation	3	46	50	1.0	1.0
	Subtotal	3	46	50	1.0	1.0
Naval Surface Weapons Center	Analysis and Testing	2	80	80	1.1	1.1
	Computer Technology	1	300	220	3.2	3.3
	Energy	2	127	65	1.7	0.5
	Fire and Safety	1	16	5	0.3	0.1
	Law Enforcement	1	50	0	1.0	0.0
	Transportation	4	297	172	2.8	3.0
	Subtotal	11	870	542	10.1	8.0
Naval Training Equipment Center	Communications	1	200	0	4.0	0.0
	Computer Technology	1	225	225	4.5	4.5
	Technological Guidance	1	0	0	0.0	0.0
	Subtotal	3	425	225	8.5	4.5
Naval Underwater Systems Center	Communications	1	0	0	0.0	0.0
	Energy	2	0	0	0.0	0.0
	Technological Guidance	5	33	0	0.0	0.0
	Subtotal	8	33	0	0.0	0.0
Naval Weapons Center	Analysis and Testing	22	2151	1400	12.1	10.4
	Energy	3	98	0	0.7	0.0
	Environment	4	88	0	0.4	0.0
	General Assistance	3	182	220	0.5	0.5
	Health and Medicine	1	14	0	0.2	0.0
	Subtotal	33	2533	1620	13.9	10.9
Naval Weapons Support Center	Communications	1	0	0	0.0	0.0
	Environment	1	0	0	0.0	0.0
	Subtotal	2	0	0	0.0	0.0

SECTION 2

TABLE 5

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY PERFORMING ACTIVITY AND TECHNOLOGICAL AREA

PERFORMING ACTIVITY	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Navy Personnel Research and Development Center	Energy	1	0	30	0.0	1.0
	Technological Guidance	2	60	60	2.0	2.0
	Subtotal	3	60	90	2.0	3.0
Office of Naval Research	Analysis and Testing	1	15	0	0.1	0.0
	Communications	3	140	120	2.2	2.0
	Computer Technology	3	204	245	3.3	4.3
	Energy	2	125	200	2.5	5.0
	Environment	2	55	0	1.0	0.0
	Fire and Safety	1	100	100	1.0	1.0
	Marine Technology	1	45	0	1.0	0.0
	Transportation	1	150	208	3.0	4.0
	Subtotal	14	834	873	14.1	16.3
U.S. Naval Academy	General Assistance	1	20	21	0.3	0.3
	Marine Technology	2	21	0	0.4	0.0
	Subtotal	3	41	21	0.7	0.3

SECTION 2

TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Federal		2	70	70	1.0	1.0
Maritime Administration	Analysis and Testing	3	106	0	1.2	0.0
	Energy	1	35	104	0.3	0.7
	Subtotal	4	141	104	1.5	0.7
Federal Railroad Administration	Analysis and Testing	1	100	100	0.5	0.5
	Subtotal	1	100	100	0.5	0.5
U.S. Coast Guard	Analysis and Testing	4	1035	527	10.1	6.0
	Computer Technology	1	352	111	3.9	1.0
	Environment	4	249	260	3.2	2.8
	Health and Medicine	1	86	0	1.1	0.0
	Instrumentation	1	350	0	2.0	0.0
	Marine Technology	1	211	248	2.0	2.0
	Technological Guidance	3	1095	465	5.4	2.1
	Transportation	2	698	650	5.5	5.6
	Subtotal	14	3356	2161	27.9	18.5
Department of Commerce	Analysis and Testing	1	0	0	0.0	0.0
	Energy	1	10	5	0.3	0.2
	Instrumentation	1	2	3	0.0	0.0
	Subtotal	3	12	8	0.3	0.2
Naval Sea Systems Command	Analysis and Testing	2	8	95	0.2	0.9
	Communications	2	495	495	10.0	9.5
	Computer Technology	2	700	920	5.2	7.3
	Energy	2	365	310	3.9	3.7
	Environment	1	0	0	0.0	0.0
	Fire and Safety	1	0	0	0.0	0.0
	Health and Medicine	1	39	0	0.7	0.7
	Instrumentation	2	26	30	0.7	0.7
	Marine Technology	1	0	0	0.0	0.0
	Technological Guidance	4	2230	2250	28.0	28.0
	Transportation	1	700	150	8.0	2.0
	Subtotal	17	4520	4155	55.9	51.2

SECTION 2

TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Joint Logistics Command	Analysis and Testing	1	1700	2000	10.0	11.0
		Subtotal	1700	2000	10.0	11.0
NASA Langley Research Center	Analysis and Testing	1	10	10	0.1	0.1
		Subtotal	10	10	0.1	0.1
NASA Ames Research Center	Analysis and Testing Fire and Safety	3	173	46	2.0	0.5
		1	15	0	0.2	0.0
		Subtotal	188	46	2.2	0.5
NASA Goddard Space Flight Center	Analysis and Testing	1	37	50	0.5	0.6
		Subtotal	37	50	0.5	0.6
NASA Lewis Research Center	Computer Technology	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
NASA Lyndon B. Johnson Space Center	Energy Health and Medicine Transportation	1	52	65	0.7	0.5
		1	26	0	2.4	0.0
		Subtotal	78	65	3.1	0.5
NASA	Analysis and Testing	1	37	38	0.3	0.3
		Subtotal	37	38	0.3	0.3
NASA--Kennedy Space Center		1	116	0	1.6	0.0
		Subtotal	116	0	1.6	0.0
NASA--George C. Marshall Space Flight Center	Transportation	1	32	35	0.5	0.5
		Subtotal	32	35	0.5	0.5

SECTION 2

TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Department of Transportation	Analysis and Testing	2	366	517	2.3	2.5
	Communications	1	50	0	0.5	0.0
	Health and Medicine	1	138	83	1.2	0.8
	Instrumentation	1	350	0	2.0	0.0
	Technological Guidance	1	955	420	3.6	1.6
Subtotal	Transportation	2	101	83	0.4	0.6
		8	1960	1103	10.0	5.5
Department of Energy	Analysis and Testing	2	917	508	3.1	3.5
	Energy	8	1661	892	10.6	7.8
	Environment	2	180	50	2.8	0.3
	Marine Technology	1	50	0	0.4	0.0
		13	2808	1450	16.9	11.6
Subtotal	Analysis and Testing	2	84	141	0.8	1.6
		2	84	141	0.8	1.6
Department of Energy Solar Energy Research Institute	Analysis and Testing	1	70	0	1.0	0.0
		1	70	0	1.0	0.0
	Analysis and Testing	1	100	100	1.4	1.4
		1	100	100	1.4	1.4
	Analysis and Testing	1	27	0	0.1	0.0
Subtotal	Energy	1	27	0	0.1	0.0
		1	27	0	0.1	0.0
Department of Energy Los Alamos Scientific Laboratory	Analysis and Testing	2	61	47	1.6	1.5
	Communications	1	0	0	0.0	0.0
	Computer Technology	2	434	1110	2.0	3.6
	Energy	1	155	150	2.0	2.0
	Fire and Safety	2	0	0	0.0	0.0
Subtotal	General Assistance	1	35	35	1.0	1.0
	Instrumentation	2	227	270	2.0	2.2
	Transportation	2	620	60	7.0	1.0
Subtotal		13	1532	1672	15.6	11.3
Department of Energy Nevada Operations Office	Analysis and Testing	1	100	100	1.4	1.4
		1	100	100	1.4	1.4
	Energy	1	27	0	0.1	0.0
		1	27	0	0.1	0.0
	Analysis and Testing	2	61	47	1.6	1.5
Subtotal	Communications	1	0	0	0.0	0.0
	Computer Technology	2	434	1110	2.0	3.6
	Energy	1	155	150	2.0	2.0
Subtotal	Fire and Safety	2	0	0	0.0	0.0
	General Assistance	1	35	35	1.0	1.0
	Instrumentation	2	227	270	2.0	2.2
Subtotal	Transportation	2	620	60	7.0	1.0
		13	1532	1672	15.6	11.3
Naval Air Systems Command	Analysis and Testing	1	100	100	1.4	1.4
		1	100	100	1.4	1.4
	Energy	1	27	0	0.1	0.0
		1	27	0	0.1	0.0
	Analysis and Testing	2	61	47	1.6	1.5
Subtotal	Communications	1	0	0	0.0	0.0
	Computer Technology	2	434	1110	2.0	3.6
	Energy	1	155	150	2.0	2.0
Subtotal	Fire and Safety	2	0	0	0.0	0.0
	General Assistance	1	35	35	1.0	1.0
	Instrumentation	2	227	270	2.0	2.2
Subtotal	Transportation	2	620	60	7.0	1.0
		13	1532	1672	15.6	11.3

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Nuclear Regulatory Commission	Analysis and Testing	1	2	8	0.0	0.0
	Energy	1	250	250	3.5	3.0
	Fire and Safety	1	16	5	0.3	0.1
	Subtotal	3	268	263	3.8	3.1
Office of Naval Research	Analysis and Testing	6	1005	936	12.8	13.2
	Communications	5	259	165	3.8	3.8
	Computer Technology	3	204	245	3.3	4.3
	Energy	3	275	500	4.5	7.0
	Environment	3	68	0	1.2	0.0
	Fire and Safety	1	100	100	1.0	1.0
	Health and Medicine	1	25	0	0.3	0.0
	Marine Technology	2	63	0	1.3	0.0
	Transportation	1	150	208	3.0	4.0
	Subtotal	25	2149	2154	31.2	33.3
Strategic Systems Project Office	Analysis and Testing	1	35	60	0.5	0.6
		1	35	60	0.5	0.6
CNO Security Assistant Training Program	Communications	1	0	0	4.0	4.0
		1	0	0	4.0	4.0
Naval Material Command	Communications	1	200	0	4.0	0.0
	Computer Technology	1	225	225	4.5	4.5
	Environment	1	0	0	0.0	0.0
	General Assistance	2	5	0	0.1	0.0
	Subtotal	5	430	225	8.6	4.5
Naval Electronic Systems Command	Communications	3	1602	2000	9.0	9.6
	Instrumentation	1	0	0	0.0	0.0
	Subtotal	4	1602	2000	9.0	9.6
Rome Air Development Center	Communications	3	490	400	5.0	4.0
		3	490	400	5.0	4.0

SECTION 2

TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
EPA National Environmental Research Center	Energy Environment	1	46	0	0.4	0.0
		1	95	150	0.5	1.0
		2	141	150	0.9	1.0
	Subtotal					
Naval Research Laboratory	Communications General Assistance Instrumentation	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
		2	12	21	0.2	0.3
	Subtotal	4	12	21	0.2	0.3
Defense Mapping Agency	Computer Technology Instrumentation	1	283	237	1.0	1.0
		4	48	0	0.0	0.0
		5	331	237	1.0	1.0
	Subtotal					
Naval Avionics Command	Computer Technology Environment Instrumentation	1	32	32	1.0	1.0
		1	22	22	1.0	1.0
		3	0	0	0.0	0.0
	Subtotal	5	54	54	2.0	2.0
National Science Foundation	Computer Technology General Assistance	1	70	0	0.6	0.0
		1	182	220	0.5	0.5
		2	252	220	1.1	0.5
	Subtotal					
U.S. Postal Service	Computer Technology	1	832	500	7.8	4.0
		1	832	500	7.8	4.0
	Subtotal					
Federal Laboratory Consortium	Energy Technical Guidance	1	0	30	0.0	1.0
		1	0	0	0.0	0.0
		2	0	30	0.0	1.0
	Subtotal					
National Oceanic and Atmospheric Administration	Environment Marine Technology	1	66	50	0.5	0.4
		2	3	0	0.1	0.0
		3	69	50	0.6	0.4
	Subtotal					
Defense Construction Supply Center	Fire and Safety	2	70	94	0.9	1.0
		2	70	94	0.9	1.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
IREC/TU	General Assistance	2 Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
Naval Facilities Engineering Command	General Assistance	2	33	0	0.4	0.0
	Marine Technology	1 Subtotal	18 51	0 0	0.3 0.7	0.0 0.0
U.S. Forest Service	General Assistance	1 Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
Sea Grant College Program	Health and Medicine	1 Subtotal	30 30	30 30	0.8 0.8	0.8 0.8
Veterans Administration	Health and Medicine	2 Subtotal	107 107	15 15	1.3 1.3	0.2 0.2
Navy Medical Research and Development Command	Health and Medicine	10 Subtotal	511 511	1071 1071	6.5 6.5	4.5 4.5
Various	Health and Medicine	4 Subtotal	4 4	2 3	0.2 0.2	0.2 0.2
U.S. Army Instrumentation for Behavioral Sciences	Health and Medicine	1 Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
Health, Education, and Welfare	Health and Medicine	1 Subtotal	14 14	0 0	0.2 0.2	0.0 0.0
Food and Drug Administration	Health and Medicine	1 Subtotal	30 30	10 10	0.3 0.3	0.1 0.1
Naval Ocean Research and Development Activity	Instrumentation	4	923	790	11.0	7.9
	Marine Technology	1 Subtotal	60 983	80 870	0.8 11.8	0.6 8.3

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Postgraduate School	General Assistance	1	5	0	0.1	0.0
		Subtotal	5	0	0.1	0.0
NOAA Data Buoy Office	Instrumentation	2	72	3	0.7	0.0
		Subtotal	72	3	0.7	0.0
NATO Seasparrow	Instrumentation	1	20	20	0.3	0.3
		Subtotal	20	20	0.3	0.3
Physical Security Systems ESD/AFSC/USAF	Law Enforcement	1	1220	2150	3.0	7.0
		Subtotal	1220	2150	3.0	7.0
DOT Federal Highway Administration	Law Enforcement	1	50	0	1.0	0.0
		Subtotal	50	0	1.0	0.0
Department of Justice Immigra- tion and Naturalization Service	Law Enforcement	1	12	0	0.2	0.0
		Subtotal	12	0	0.2	0.0
Department of Interior U.S. Geological Survey	Marine Technology	2	282	329	2.3	2.2
		Subtotal	282	329	2.3	2.2
Department of Interior Bureau and Land Management	Marine Technology	1	95	0	0.3	0.0
		Subtotal	95	0	0.3	0.0
National Marine Fisheries	Marine Technology	1	12	0	0.2	0.0
		Subtotal	12	0	0.2	0.0
Defense Nuclear Agency	Technological Guidance	1	35	270	0.6	4.0
		Subtotal	35	270	0.6	4.0
Naval Training Equipment Center	Technological Guidance	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
Federal Aviation Administration	Transportation	2	108	27	0.7	0.1
		Subtotal	108	27	0.7	0.1

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FEDERAL SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Defense Advanced Research Projects Agency	Transportation	1	3100	18400	10.0	10.0
		Subtotal	3100	18400	10.0	10.0
U.S. Air Force	Transportation	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
Joint Cruise Missiles Project Office	Transportation	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
DOT Federal Railroad Administration	Transportation	1	250	120	2.0	2.0
		Subtotal	250	120	2.0	2.0
DOT Federal Office Hazardous Material	Transportation	1	6	12	0.2	0.4
		Subtotal	6	12	0.2	0.4

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

FOREIGN SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Great Britain	Analysis and Testing	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
International Government	Energy	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

INDUSTRY SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Various	General Assistance	1 Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
Industry	Analysis and Testing	1 Subtotal	22 22	24 24	0.5 0.5	0.5 0.5
Avondale	Analysis and Testing Instrumentation	1 1 Subtotal	4 1 5	95 1 96	0.1 0.0 0.1	0.9 0.0 0.9
Royal Industries, Inc.	Analysis and Testing	1 Subtotal	33 33	0 0	0.1 0.1	0.0 0.0
Explosive Technical, Inc.	Analysis and Testing	1 Subtotal	14 14	0 0	0.1 0.1	0.0 0.0
Hughes Aircraft	Analysis and Testing	2 Subtotal	20 20	0 0	0.0 0.0	0.0 0.0
General Dynamics Convair	Analysis and Testing	1 Subtotal	11 11	0 0	0.2 0.2	0.0 0.0
Aeroproject Ordnance and Manufacturing Company	Analysis and Testing	1 Subtotal	58 58	0 0	0.1 0.1	0.0 0.0
Voight Helicopter Inc.	Analysis and Testing	1 Subtotal	111 111	0 0	0.1 0.1	0.0 0.0
Firestone Coated Fabrics, Inc.	Analysis and Testing	1 Subtotal	72 72	0 0	0.0 0.0	0.0 0.0
Martin-Marietta Aerospace	Analysis and Testing	1 Subtotal	60 60	0 0	0.2 0.2	0.0 0.0
American Safety Flight System	Analysis and Testing	1 Subtotal	13 13	0 0	0.0 0.0	0.0 0.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

INDUSTRY SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Upjohn International and Navy	Health and Medicine	1	40	0	0.1	0.1
		Subtotal	40	0	0.1	0.1
Production Control Systems, Inc.	Instrumentation	1	1	2	0.0	0.0
		Subtotal	1	2	0.0	0.0
Bay Technical Associates, Inc.	Instrumentation	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
Louisiana Power and Light	Instrumentation	1	5	10	0.0	0.0
		Subtotal	5	10	0.0	0.0
Mississippi Power and Light	Instrumentation	1	2	10	0.0	0.0
		Subtotal	2	10	0.0	0.0
MRS Manufacturing Company	Instrumentation	1	1	3	0.0	0.0
		Subtotal	1	3	0.0	0.0
NUS Corporation	Instrumentation	1	8	10	0.0	0.0
		Subtotal	8	10	0.0	0.0
Raychem Corporation	Marine Technology	1	0	0	0.1	0.0
		Subtotal	0	0	0.1	0.0
Bechman Instruments, Inc.	Marine Technology	1	0	1	0.0	0.0
		Subtotal	0	1	0.0	0.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

NONPROFIT SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Social Naval Architecture and Engineering	Analysis and Testing	1	10	0	0.1	0.0
		Subtotal	10	0	0.1	0.0
Applied Physics Laboratory/Johns Hopkins University	Analysis and Testing Environment	1	10	0	0.2	0.0
		Subtotal	15	0	0.0	0.0
Local Government Assistance Task Force (FLC-Far West Region)	Health and Medicine	1	25	0	0.2	0.0
		Subtotal	25	0	0.2	0.0
Various POW Organizations	Health and Medicine	1	1	1	0.1	0.1
		Subtotal	1	1	0.1	0.1
Victoria Behavioral Research Assn, Ltd.	Technological Guidance	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
CTIP	General Assistance Technological Guidance	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
NUSC New England Innovation Group, & Public Technology, Inc.	Technological Guidance Communications	1	40	40	1.0	1.0
		Subtotal	33	40	0.0	0.0
Pacific Northwest Innovation Group	Technological Guidance	1	73	40	1.0	1.0
		Subtotal	73	40	1.0	1.0
International Research Group on Wood Preservation	Marine Technology	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0
Institute for Acoustic Research	Marine Technology	1	15	15	1.0	1.0
		Subtotal	15	15	1.0	1.0
Rhode Island League of Cities and Towns	Communications	1	0	0	0.0	0.0
		Subtotal	0	0	0.0	0.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

NONPROFIT SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
NUSC/University of Conn.	Energy	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Metal Properties Council	Energy	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0

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TABLE 6

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND TECHNOLOGICAL AREA

STATE SPONSOR	TECHNOLOGICAL AREA	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Sante Fe, NM	Computer Technology	Subtotal 1	0	0	0.0	0.0
			0	0	0.0	0.0
Western Kansas Ground Water District #1	Environment	Subtotal 1	18	0	0.2	0.0
			18	0	0.2	0.0
California Santa Barbara County	Environment	Subtotal 1	0	0	0.0	0.0
			0	0	0.0	0.0
University of California BuMed & Surgery	Marine Technology Health and Medicine	Subtotal 2	51	0	1.0	0.0
			51	0	0.0	0.0
			51	0	1.0	0.0
City & County of San Diego	Technological Guidance	Subtotal 2	63	60	2.1	2.0
			63	60	2.1	2.0
Carson City, Nevada	Fire and Safety Health and Medicine	Subtotal 2	0	0	0.0	0.0
			0	0	0.0	0.0
			0	0	0.0	0.0
Anne Arundel County Schools	General Assistance	Subtotal 1	20	21	0.3	0.3
			20	21	0.3	0.3
South Carolina Wildlife and Marine Resources Department	Instrumentation	Subtotal 1	0	1	0.0	0.0
			0	1	0.0	0.0
Connecticut General Assistance	Technological Guidance	Subtotal 1	0	0	0.0	0.0
			0	0	0.0	0.0
Conference of Municipalities	Technological Guidance	Subtotal 1	0	0	0.0	0.0
			0	0	0.0	0.0
Naval Underwater Systems Center	Technological Guidance	Subtotal 1	0	0	0.0	0.0
			0	0	0.0	0.0

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TABLE 7

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Air Systems Command	NAEC	1	46	47	1.5	1.5
	NRL	5	864	1260	4.2	5.6
	NAVAIR	5	425	125	9.0	3.0
	NAVC	1	0	0	0.0	0.0
	NCSC	1	197	240	1.2	1.2
	Subtotal	13	1532	1672	15.7	11.3
Naval Material Command	NAEC	1	0	0	0.0	0.0
	NPS	1	5	0	0.1	0.0
	NRL	1	0	0	0.0	0.0
	NTEC	2	425	225	8.5	4.5
	Subtotal	5	430	225	8.6	4.5
Naval Facilities	NPS	2	33	0	0.4	0.0
	USNA	1	18	0	0.3	0.0
	Subtotal	3	51	0	0.7	0.0
National Oceanic & Atmospheric Administration	USNA	1	3	0	0.1	0.0
	NRL	1	0	0	0.0	0.0
	DWT	1	66	50	0.5	0.4
	Subtotal	3	69	50	0.6	0.4
Naval Postgraduate School	NPS	1	5	0	0.1	0.0
	Subtotal	1	5	0	0.1	0.0
U.S. Forest Service	NPS	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Naval Sea Systems Command	DWT	3	404	795	2.1	4.9
	NMEP	1	4	0	0.1	0.0
	NSWSES	2	26	30	0.7	0.7
	NAVSEA	4	2930	2400	36.0	30.0
	NWISC	2	0	0	0.0	0.0
	NRL	5	860	805	13.9	13.2
	NSWC	1	300	220	3.2	3.3
	NW&D	1	39	0	0.7	0.0
	Subtotal	19	4563	4250	56.7	52.1

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TABLE 7

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Federal Laboratory Consortium	NPRDC	3	62	90	2.0	3.0
	NUSC	1	0	0	0.0	0.0
	Subtotal	4	62	90	2.0	3.0
U.S. Coast Guard	NOSC	7	1560	981	14.6	8.9
	DWT	8	1211	860	13.0	9.1
	NADC	2	1305	420	5.6	1.6
	Subtotal	17	4076	2261	33.2	19.6
Veterans Administration	NOSC	1	106	14	1.2	0.1
	NBRC	1	1	1	0.1	0.1
	Subtotal	2	107	15	1.3	0.2
Department of Justice Immigration and Naturalization Services	NOSC	1	12	0	0.2	0.0
	Subtotal	1	12	0	0.2	0.0
U.S. Department Interior Bureau of Land Management	NOSC	1	95	0	0.3	0.0
	Subtotal	1	95	0	0.3	0.0
U.S. Geological Survey	NOSC	1	282	329	2.3	2.2
	NOC	1	0	0	0.0	0.0
	Subtotal	2	282	329	2.3	2.2

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
National Aeronautic and Space Administration, Kennedy Space Center	NWC	2	92	34	0.5	0.3
	NO SC	1	116	0	1.6	0.0
	Subtotal	3	208	34	2.1	0.3
Ames Research Center	NO SC	1	15	0	0.2	0.0
	NWC	3	173	46	2.0	0.5
	Subtotal	4	188	46	2.2	0.5
Langley Research Center	NSWC	1	10	10	0.1	0.1
		1	10	10	0.1	0.1
Lyndon B. Johnson Center	NSWC	2	61	70	0.8	0.6
	NADC	1	26	0	2.4	0.0
	Subtotal	3	87	70	3.2	0.6
George C. Marshall Space Flight Center	NSWC	1	32	35	0.5	0.5
		1	32	35	0.5	0.5
Goddard Space Flight Center	NWC	1	37	50	0.5	0.6
		1	37	50	0.5	0.6
Lewis Research Center	NADC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
National Marine Fisheries	NO SC	1	12	0	0.2	0.0
		1	12	0	0.2	0.0
Department of Transportation	NO SC	2	134	75	0.6	0.5
	NWC	2	366	517	2.3	2.5
	CEL	2	155	91	1.5	0.9
	NADC	2	1305	420	5.6	1.6
	Subtotal	8	1960	1103	10.0	5.5
National Science Foundation	NO SC	1	70	0	0.6	0.0
	NWC	1	182	220	0.5	0.5
	NPRDC	1	60	60	2.0	2.0
	Subtotal	3	312	280	3.1	2.5

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TABLE 7

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
U.S. Postal Service	NOSC	1	832	500	7.8	4.0
	NSWC	1	75	0	1.0	0.0
	NCSC	1	300	152	4.0	2.5
	NBIOL	1	130	0	2.5	0.0
	NORDA	1	300	75	2.0	1.0
	NWC	2	917	508	3.1	3.5
	Subtotal	7	2554	1235	20.4	11.0
Department of Energy	NRL	3	370	545	2.7	3.3
	CEL	2	666	120	1.3	1.0
	Subtotal	5	1036	665	4.0	4.3
Safety/Isotope Fuel Branch	NOSC	1	50	50	0.3	0.3
	Subtotal	1	50	50	0.3	0.3
Los Alamos Scientific Laboratory	NWC	1	100	100	1.4	1.4
	Subtotal	1	100	100	1.4	1.4
Nevada Operations Office	NWC	1	27	0	0.1	0.0
	Subtotal	1	27	0	0.1	0.0
Solar Energy Research Institute	NWC	2	84	141	0.8	1.6
	Subtotal	2	84	141	0.8	1.6
Lawrence Livermore Laboratory	NWC	1	70	0	1.0	0.0
	Subtotal	1	70	0	1.0	0.0
Department of Transportation Highway Administration	NSWC	1	50	0	1.0	0.0
	DWT	1	100	100	0.5	0.5
	Subtotal	2	150	100	1.5	0.5
Railroad Administration	NSWC	1	250	120	2.0	2.0
	Subtotal	1	250	120	2.0	2.0
Hazardous Material	NSWC	1	6	12	0.2	0.4
	Subtotal	1	6	12	0.2	0.4

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TABLE 7

SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Training Equipment Center	NTEC	Subtotal	1	0	0	0.0
			1	0	0	0.0
Independent Research and Development/Technology Utilization Office	NWC	Subtotal	2	0	0	0.0
			2	0	0	0.0
Health, Education and Welfare	NWC	Subtotal	1	14	0	0.2
			1	14	0	0.2
National Environmental Research (EPA) Center	NWC NCSC	Subtotal	1	46	0	0.4
			1	95	150	0.5
			2	141	150	0.9
Sea Grant College Program	NBIOL	Subtotal	1	30	30	0.8
			1	30	30	0.8
Joint Logistics Commanders	FLTAC	Subtotal	1	1700	2000	10.0
			1	1700	2000	10.0
U.S. Air Force	JCM	Subtotal	1	0	0	0.0
			1	0	0	0.0
Joint Cruise Missiles Project Office	JCM	Subtotal	1	0	0	0.0
			1	0	0	0.0
Perkin Elmer	NRL	Subtotal	1	0	0	0.0
			1	0	0	0.0
Federal	NSWC NUSC	Subtotal	1	70	70	1.0
			1	0	0	0.0
			2	70	70	1.0
Various	NHRC	Subtotal	4	4	3	0.4
			4	4	3	0.4

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Naval Research Laboratory	NRL	3	0	0	0.0	0.0
	NORDA	1	12	21	0.2	0.3
	NBIOL	1	13	0	0.2	0.0
	Subtotal	5	25	21	0.4	0.3
Food and Drug Administration Bureau of Radiological Health	NRL	1	30	10	0.3	0.1
	Subtotal	1	30	10	0.3	0.1
Naval Electronics System Command	NRL	4	1602	2000	9.0	9.6
	Subtotal	4	1602	2000	9.0	9.6
Nuclear Regulatory Commission	NRL	2	252	258	3.5	3.0
	NSWC	1	16	5	0.3	0.1
	Subtotal	3	268	263	3.8	3.1
Office of Naval Research	NRL	8	1259	1221	16.7	17.0
	ONR	14	834	873	14.1	16.3
	NHRC	1	25	0	0.3	0.0
	Subtotal	23	2118	2094	31.1	33.3
Rome Air Development Center	NRL	2	0	0	0.0	0.0
	DWT	1	490	400	5.0	4.0
	Subtotal	3	490	400	5.0	4.0
Strategic Systems Project Office	NRL	1	35	60	0.5	0.6
	Subtotal	1	35	60	0.5	0.6
Navy NATO Seasparrow	NSWSES	1	20	20	0.3	0.3
	Subtotal	1	20	20	0.3	0.3
Federal Aviation Administration	NOAC	1	50	0	0.5	0.0
	CEL	2	108	27	0.7	0.2
	Subtotal	3	158	27	1.2	0.2
Naval Medical Research and Development Command	NM&D	10	511	351	6.5	4.5
	Subtotal	10	511	351	6.5	4.5

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Defense Mapping Agency	NORDA NOC	1	283	237	1.0	1.0
		4	48	0	0.0	0.0
		5	331	237	1.0	1.0
	Subtotal					
Chief Naval Operations Security Assistant Training Program	NOC	1	0	0	4.0	4.0
		1	0	0	4.0	4.0
Naval Avionics Command	NOC	5	54	54	2.0	2.0
		5	54	54	2.0	2.0
Department of Commerce National Data Buoy Office	NOC NORDA	1	10	5	0.3	0.2
		1	70	0	0.7	0.0
		2	80	5	1.0	0.2
	Subtotal					
Physical Security Systems Directorate ESD/AFSC/USAF	NCSC	1	1220	2150	3.0	7.0
		1	1220	2150	3.0	7.0
U.S. Army Institute for Behavioral & Social Sciences	NHRC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Defense Advanced Research Projects Agency	DWT	1	3100	18400	10.0	10.0
		1	3100	18400	10.0	10.0
Naval Ocean Research and Development Activity	NORDA	5	983	870	11.8	8.5
		5	983	870	11.8	8.5
Defense Construction Supply Center	DWT	1	60	67	0.8	0.8
		1	60	67	0.8	0.8
Defense General Supply Center	DWT	1	18	27	0.1	0.2
		1	18	27	0.1	0.2
Maritime Administration	DWT	4	141	104	1.5	0.7
		4	141	104	1.5	0.7
	Subtotal					

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FEDERAL SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Department of Commerce	DWT	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Navy	NHRC	1	40	0	0.1	0.1
	Subtotal	1	40	0	0.1	0.1

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

FOREIGN SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
International Government	NOC	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0
Great Britain	NAEC	1	0	0	0.0	0.0
	Subtotal	1	0	0	0.0	0.0

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

INDUSTRY SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Industry	NSWC	1	70	70	1.0	1.0
	NOSC	1	22	24	0.5	0.5
	Subtotal	2	92	94	1.5	1.5
Various	NAVSEA	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Production Control Systems Inc.	NOC	1	1	2	0.0	0.0
		1	1	2	0.0	0.0
Avondale Shipyard, New Orleans	NOC	1	1	1	0.0	0.0
	DWT	1	4	95	0.1	0.9
	Subtotal	2	5	96	0.1	0.9
Bay Technical Associates, Inc.	NOC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Louisiana Power & Light	NOC	1	5	10	0.0	0.0
		1	5	10	0.0	0.0
Mississippi Power and Light	NOC	1	2	10	0.0	0.0
		1	2	10	0.0	0.0
M-R-S Manufacturing Company	NOC	1	1	3	0.0	0.0
		1	1	3	0.0	0.0
NUS Corporation	NOC	1	8	10	0.0	0.0
		1	8	10	0.0	0.0
Raychem Corporation Houston	NOC	1	0	0	0.1	0.0
		1	0	0	0.1	0.0
Beckman Instruments, Inc.	NOC	1	0	1	0.0	0.0
		1	0	1	0.0	0.0

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

INDUSTRY SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Upjohn International	NOC	1	40	0	0.1	0.1
	Subtotal	1	40	0	0.1	0.1
Royal Industries, Inc.	NWC	1	33	0	0.1	0.0
	Subtotal	1	33	0	0.1	0.0
Explosive Technology, Inc.	NWC	1	14	0	0.1	0.0
	Subtotal	1	14	0	0.1	0.0
Hughes Aircraft	NWC	2	20	0	0.0	0.0
	Subtotal	2	20	0	0.0	0.0
General Dynamics Command	NWC	1	11	0	0.2	0.0
	Subtotal	1	11	0	0.2	0.0
Aerofjet Ordnance & Manufacturing Co.	NWC	1	58	0	0.1	0.0
	Subtotal	1	58	0	0.1	0.0
Vought Helicopter Inc.	NWC	1	111	0	0.1	0.0
	Subtotal	1	111	0	0.1	0.0
Firestone Coated Fabrics Company, Inc.	NWC	1	72	0	0.1	0.0
	Subtotal	1	72	0	0.1	0.0
Martin-Marietta Aerospace	NWC	1	60	0	0.2	0.0
	Subtotal	1	60	0	0.2	0.0
American Safety Flight System	NWC	1	13	0	0.0	0.0
	Subtotal	1	13	0	0.0	0.0

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

NONPROFIT SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Society of Naval Architects and Engineers	DWT	1	10	0	0.1	0.0
		1	10	0	0.1	0.0
Rhode Island League of Cities and Towns	NUSC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
New England Innovation Group	NUSC	2	0	0	0.0	0.0
		2	0	0	0.0	0.0
NUSC/University of Connecticut	NUSC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
CTIP	NUSC NRL	1	33	0	0.0	0.0
		1	40	40	1.0	1.0
		2	73	40	1.0	1.0
Public Technology, Inc.	NUSC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Metal Properties Council	NRL	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Applied Physics Laboratory/ Johns Hopkins University	NOSC	1	10	0	0.2	0.0
		1	10	0	0.2	0.0
Institute for Acoustic Research	NOSC	1	12	0	0.2	0.0
		1	12	0	0.2	0.0
Pacific Northwest Innovations	NOSC	1	15	15	1.0	0.0
		1	15	15	1.0	0.0
International Research Group on Wood Preservation	NOC	1	0	0	0.0	0.0
		1	0	0	0.0	0.0
Local Government Assistance Task Force	MIRC	1	1	1	0.1	0.1
		1	1	1	0.1	0.1

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

NONPROFIT SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Various POW Organizations	NHRC	1 1	0 0	0 0	0.0 0.0	0.0 0.0
Victoria Behavioral Research Assn, LTD	NHRC	1 1	0 0	0 0	0.0 0.0	0.0 0.0
Johns Hopkins University	NWC	1 1	15 15	0 0	0.0 0.0	0.0 0.0
	Subtotal					

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY INDIVIDUAL SPONSOR AND PERFORMING ACTIVITY

STATE SPONSOR	PERFORMING ACTIVITY	NUMBER OF PROJECTS	FUNDING (\$K)		MAN-YEARS	
			FY79	FY80	FY79	FY80
Anne Arundel County Schools	USNA	Subtotal	20 20	21 21	0.3 0.3	0.3 0.3
City and County of San Diego	NPRDC NOSC	1	60	60	2.0	2.0
		1 2	3 63	0 60	0.1 2.1	0.0 2.0
University of California BuMed and Surgery	NOSC NHRC	1	51	0	1.0	0.0
		1 2	0 51	0 0	0.1 1.1	0.1 0.1
Santa Fe, New Mexico	NPS	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		1 1	0 0	0 0	0.0 0.0	0.0 0.0
Carson City, Nevada	NPS	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		2 2	0 0	0 0	0.0 0.0	0.0 0.0
Connecticut General Assembly	NUSC	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		1 1	0 0	0 0	0.0 0.0	0.0 0.0
Connecticut Conference of Municipalities	NUSC	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		1 1	0 0	0 0	0.0 0.0	0.0 0.0
Naval Underwater Systems Center	NUSC	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		1 1	0 0	0 0	0.0 0.0	0.0 0.0
Santa Barbara County	NWC	Subtotal	0 0	0 0	0.0 0.0	0.0 0.0
		1 1	0 0	0 0	0.0 0.0	0.0 0.0
Western Kansas Ground Water District #1	NWC	Subtotal	18 18	0 0	0.2 0.2	0.0 0.0
		1 1	0 0	0 0	0.2 0.2	0.0 0.0
South Carolina and Marine Resources Department	NOC	Subtotal	0 0	1 1	0.0 0.0	0.0 0.0
		1 1	0 0	1 1	0.0 0.0	0.0 0.0

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

ANALYSIS AND TESTING PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
	PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
David W. Taylor	10	8	891	717	8.8	7.3
Government-Industry Data Exchange Program	1	1	1700	2000	10.0	11.0
Naval Fleet Analysis Center						
Naval Mine Engineering Facility	1	1	4	0	0.1	0.0
Naval Surface Weapons Center	2	2	80	80	1.0	1.0
Naval Weapons Center	22	20	2173	1400	12.1	10.4
Naval Ocean Systems Center	4	3	400	124	4.0	1.5
Naval Research Laboratory	8	5	1042	1004	13.4	13.8
Office of Naval Research	1	1	15	0	0.1	0.0
Naval Air Engineering Center	2	2	46	47	1.5	1.5
Subtotal	51	43	6351	5372	51.0	46.5

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

COMMUNICATIONS	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Naval Air Systems Command	1	1	0	0	0.0	0.0
	Naval Oceanographic Office	1	1	0	0	4.0	4.0
	Naval Training Equipment Center	1	1	200	0	4.0	0.0
	Naval Underwater Systems Center	1	3	0	0	0.0	0.0
	Naval Weapons Support Center	1	1	0	0	0.0	0.0
	Naval Ocean Systems Center	1	2	50	0	0.5	0.0
	Naval Research Laboratory	9	5	2216	2630	21.0	20.9
	Office of Naval Research	3	1	140	120	2.2	2.0
	Subtotal	18	15	2606	2750	31.7	26.9

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

COMPUTER TECHNOLOGY	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	David W. Taylor	1	1	400	700	2.0	4.0
	Naval Air Development Center	1	1	0	0	0.0	0.0
	Naval Ocean Research and Development Activity	1	1	283	237	1.0	1.0
	Naval Oceanographic Office	1	1	32	32	1.0	1.0
	Naval Surface Weapons Center	1	1	300	220	3.2	3.3
	Naval Training Equipment Center	1	1	225	225	4.5	4.5
	Naval Ocean Systems Center	3	3	1254	611	12.3	5.0
	Naval Research Laboratory	2	1	434	1110	2.0	3.6
	Office of Naval Research	3	1	204	245	3.3	3.3
	Naval Postgraduate School	1	1	0	0	0.0	0.0
	Subtotal	15	12	3132	3380	29.3	25.7

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
	PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
Civil Engineering Laboratory	1	2	616	120	0.9	1.0
David W. Taylor	1	1	35	104	0.3	0.7
Naval Coastal Systems Center	1	1	300	152	4.0	2.5
Naval Ocean Research and Development Command	1	1	300	75	2.0	1.0
Naval Oceanographic Office	2	2	10	5	0.3	0.2
Naval Surface Weapons Center	2	2	127	65	1.7	0.5
Naval Underwater Systems Center	2	2	0	0	0.0	0.0
Naval Weapons Center	3	3	98	0	0.7	0.0
Navy Personnel Research and Development Center	1	1	0	30	0.0	1.0
Naval Research Laboratory	9	6	1290	1405	14.1	13.2
Office of Naval Research	2	1	125	200	2.5	5.0
Subtotal	25	22	2901	2156	26.5	25.1

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

ENVIRONMENT	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	David W. Taylor	5	3	749	590	7.9	5.9
	Naval Biosciences Laboratory	2	2	143	0	2.7	0.0
	Naval Coastal Systems Center	2	2	117	172	1.5	2.0
	Naval Weapons Center	4	4	88	0	0.4	0.0
	Naval Weapons Support Center	1	1	0	0	0.0	0.0
	Naval Ocean Systems Center	2	2	106	170	1.1	1.6
	Office of Naval Research	2	1	55	0	1.0	0.0
	Naval Air Engineering Center	1	1	0	0	0.0	0.0
	Subtotal	19	16	1258	932	14.6	9.5

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
	PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
David W. Taylor	2	2	70	94	0.9	1.0
Naval Air Systems Command	1	1	0	0	0.0	0.0
Naval Air Test Center	1	1	0	0	0.0	0.0
Naval Surface Weapons Center	1	1	16	5	0.3	0.1
Naval Ocean Systems Center	1	1	15	0	0.2	0.0
Naval Research Laboratory	1	1	0	0	0.0	0.0
Office of Naval Research	1	1	100	100	1.0	1.0
Naval Postgraduate School	1	1	0	0	0.0	0.0
Subtotal	9	9	201	199	2.4	2.1

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

GENERAL ASSISTANCE	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Naval Air Systems Command	1	1	35	35	1.0	1.0
	Naval Sea Systems Command	1	1	0	0	0.0	0.0
	Naval Weapons Center	3	2	182	220	0.5	0.5
	U.S. Naval Academy	1	1	20	21	0.3	0.3
	Naval Research Laboratory	3	4	40	40	1.0	1.0
	Naval Postgraduate School	3	5	33	0	0.4	0.0
	Subtotal	12	14	310	316	3.2	2.8

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

HEALTH AND MEDICINE	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Civil Engineering Laboratory	1	1	138	83	1.2	0.8
	Naval Air Development Center	1	1	26	0	2.4	0.0
	Naval Biosciences Laboratory	1	1	30	30	0.8	0.8
	Naval Health Research Center	11	9	71	5	1.1	0.8
	Naval Medical Research and Development Command	9	2	486	1071	6.2	4.5
	Naval Weapons Center	1	1	14	0	0.2	0.0
	Naval Ocean Systems Center	2	2	192	14	2.3	0.1
	Naval Research Laboratory	1	1	30	10	0.3	0.1
	Naval Postgraduate School	1	1	0	0	0.0	0.0
	Subtotal	28	19	987	1213	14.5	7.1

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

INSTRUMENTATION	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Naval Air Development Center	1	1	350	0	2.0	0.0
	Naval Air Systems Command	1	1	30	30	1.0	1.0
	Naval Coastal Systems Center	1	1	197	240	1.0	1.2
	Naval Ocean Research and Development Activity	6	4	1005	811	11.9	8.2
	Naval Oceanographic Office	13	12	68	39	0.0	0.0
	Naval Ship Weapon Systems Engineering Station	3	2	46	50	1.0	1.0
	Naval Research Laboratory	2	2	0	0	0.0	0.0
	Subtotal	27	23	1696	1170	16.9	11.4

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

LAW ENFORCEMENT	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Naval Coastal Systems Center	1	1	1220	2150	3.0	7.0
	Naval Surface Weapons Center	1	1	50	0	1.0	0.0
	Naval Ocean Systems Center	1	1	12	0	0.2	0.0
	Subtotal	3	3	1282	2150	4.2	7.0

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

MARINE TECHNOLOGY PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
	PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
Civil Engineering Laboratory	1	1	50	0	0.4	0.0
David W. Taylor	2	2	211	248	2.0	2.0
Naval Ocean Research and Development Activity	1	1	60	80	0.8	0.6
Naval Oceanographic Office	4	4	0	1	0.1	0.0
U.S. Naval Academy	2	3	21	0	0.4	0.0
Naval Ocean Systems Center	6	6	568	329	5.6	2.2
Naval Research Laboratory	1	1	0	0	0.0	0.0
Office of Naval Research	1	1	45	0	1.0	0.0
Subtotal	18	19	955	658	10.3	4.8

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

TECHNOLOGICAL GUIDANCE PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
	PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
David W. Taylor	3	2	175	315	2.4	4.6
Naval Air Development Center	1	2	955	420	3.6	1.6
Naval Health Research Center	1	1	0	0	0.0	0.0
Naval Sea Systems Command	3	3	2230	2250	28.0	28.0
Naval Training Equipment Center	1	1	0	0	0.0	0.0
Naval Underwater Systems Center	5	5	33	0	0.0	0.0
Naval Personnel Research and Development Center	2	3	60	60	2.0	2.0
Naval Ocean Systems Center	2	2	18	15	1.1	0.0
Naval Research Laboratory	1	1	0	0	0.0	0.0
Subtotal	19	20	3471	3060	37.1	36.2

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SUMMARY OF FY 1979 TECHNOLOGY TRANSFER PROJECTS, LISTED BY TECHNOLOGICAL AREA AND PERFORMING ACTIVITY

TRANSPORTATION	PERFORMING ACTIVITY	NUMBER OF		FUNDING (\$K)		MAN-YEARS	
		PROJECTS	SPONSORS	FY79	FY80	FY79	FY80
	Civil Engineering Laboratory	3	2	125	35	1.0	0.2
	David W. Taylor	1	1	3100	18400	10.0	10.0
	Joint Cruise Missiles Project Office	2	2	0	0	0.0	0.0
	Naval Air Systems Command	1	1	360	60	7.0	1.0
	Naval Sea Systems Command	1	1	700	150	8.0	2.0
	Naval Surface Weapons Center	4	4	297	172	2.8	3.0
	Naval Ocean Systems Center	3	2	782	725	5.6	6.1
	Naval Research Laboratory	1	1	260	0	0.0	0.0
	Office of Naval Research	1	1	150	208	3.0	4.0
	Subtotal	17	15	5774	19750	37.4	26.3

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Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years				Sponsor
					FY79	FY80	FY79	FY80	
DWT 14	Analysis and Testing	Effect of Radial Load Distribution on Propeller Cavitation Erosion	Hydrodynamics	Cavitation erosion tests complete.	10	0	0.1	0.0	NP--Soc. Nav. Arch. and Engrs.
DWT 15	Analysis and Testing	Evaluation of Effectiveness of Protective Coatings for Propellers	Hydrodynamics, Propeller Coating	Procedures are being developed. Samples have been tested.	41	0	0.4	0.0	Fed--Maritime Admin.
DWT 18	Analysis and Testing	Stress Relaxation Characteristics of Elastomeric Isolation Mounts	Maintenance Reduction, Machinery Silencing	Apparatus to monitor stress de- signed. Isolation mounts received.	100	100	0.5	0.5	Fed--Fed RR Admin.
DWT 19	Analysis and Testing	Energy Conservation Study on Tandem Propellers	Propeller Design, Performance Testing	Experiments made to evaluate tandem design. Report on propulsion tests.	45	--	0.6	--	Fed--Maritime Admin.
DWT 22	Analysis and Testing	Full-Scale Stress Mea- surements on Control- lable Pitch Propeller	Propeller Loads and Stresses, Spindle Torque	Full-scale trials conducted in ice and open water. Some findings reported.	603	200	6.0	2.3	Fed--U.S. Coast Guard
DWT 26	Analysis and Testing	Avondale Shipyard Powering Trials, Provide Torsion- meter and Assist in In- stallation	Instrumentation of Trial	Report published. DTNSRDC 79/084	4	95	0.1	0.9	Ind--Avondale Shipyards, Inc.
DWT 27	Analysis and Testing	Tanker Berthing Evaluation	Instrumentation of Trial	Trials conducted to gather tug/ship interaction forces; report issued.	--	--	--	--	Fed--Dept. Commerce
DWT 28	Analysis and Testing	Shallow Water Maneuvering Trials	Instrumentation of Trial	Trials run; parameters measured; report pub- lished.	20	--	0.2	--	Fed--Maritime Admin.
DWT 29	Analysis and Testing	RMS ADDIRIVAH (MSC-412) Standardization, Tacti- cal, and Fuel Economy Trials	Instrumentation of Trial	Trials concluded and report published.	4	95	0.1	0.9	Fed--NAVSEASYSOM
DWT 30	Analysis and Testing	KATMAI Bay (WTGB-101) Speed, Tactical, and Maneuvering Trials	Instrumentation of Trial	Tactical, maneuvering, speed-vs-shaft-RPM, and ice-breaking trails conducted.	64	227	0.8	2.7	Fed--U.S. Coast Guard
FLTAC 32	Analysis and Testing	GIDEP Operations Center	Computer Data Processing and Analysis, Com- munications Networking	\$24 million savings (cost avoidance) in CY 1978 plus intan- gibles.	1700	2000	10.0	11.0	Fed--Joint Logistics Commanders

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	
NMZF 71	Analysis and Testing	Hydrogen Evolution Rates, Dev. of Hydrogen Getter	Equipment Development	Gathers great commer- cial potential for use in seal vessels con- taining batteries.	4	--	0.1	-- Fed--NAVSEASYSOOM
NSWC 115	Analysis and Testing	Position Lifetime Tech- nique--Measuring Moisture in Composites	Composite Materials Nondestr. Testing	Feasibility demon- strated for several polyamide resins.	10	10	0.1	0.1 Fed--NASA Langley Research Ctr.
NSWC 120	Analysis and Testing	Underwater Tank Tests Using Unique Facilities	Hydroballistics	Test services provided for Navy and industry.	70	70	1.0	1.0 Fed. and Ind.
NWC 135	Analysis and Testing	Fire/Ballistic Tests of Composites; Fibers Re- leased From Graphite- Epoxy Composites	Aeronautics	Prepared test site and collection tunnel.	35	30	0.3	0.3 Fed--NASA Ames Research Center
NWC 136	Analysis and Testing	Drop Tank Test--Part of Navy Acceptance	Aeronautics	Fuel fire and fuel vapor ignition tests.	33	0	0.1	0.0 Ind--Royal Indus- tries, Inc.
NWC 138	Analysis and Testing	To Quantify Hazards with Large Spills of LNG and LPG, Spill Facility Completed	Atmospheric Physics, Safety and Chemical Engineering	Burning behavior, detonation tests, vapor dispersion, concentration.	141	100	1.0	0.8 Fed--Dept. Trans.
NWC 139	Analysis and Testing	Ammonia Spill Tests; Extent of Hazard	Atmospheric Physics, Safety and Chemical Engineering	Nondispersive spectrophotometer evaluated for de- termining ammonia concentration. New data acquisi- tion system being specified.	225	417	1.3	1.7 Fed--Dept. Trans.
NWC 140	Analysis and Testing	Spill Tests--LNG and LPG; Design Facility	Atmospheric Physics, Safety and Chemical Engineering	Contractor bidding on 40-cum facility. Vapor concentration studies.	787	378	2.1	2.5 Fed--Dept. Energy
NWC 141	Analysis and Testing	Maverick Booster Testing for Explosive Technology Inc.	Explosives/ Propellants	Test boosters at impact shock levels predicted for war- head.	14	0	0.1	0.0 Ind--Explosive Technology Inc.
NWC 143	Analysis and Testing	Physics of Crystalline Surfaces to Produce Better Thin-Film Devices	Solid-State Physics	Mechanism of formation of epitaxial films and nature of "clean" crystal surfaces. Publications.	15	16	0.2	0.2 Fed--NASA Ames Research Center

Perform- ing Activity	Technology- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NWC 144	Analysis and Testing	Optical Evaluation of Typical FLIR Spherical Mirror; To Measure Scattering	Optics	Mirror polished, coated, and measured. Continuing.	0	0	0.0 0.0	Ind--Hughes Aircraft
NWC 145	Analysis and Testing	Mirror Surface Char- acterization for Large Optics	Optics	Surface quality evaluation in pro- cessing of ad- vanced optical materials.	11	0	0.2 0.0	Ind--General Dynamics Convair
NWC 146	Analysis and Testing	Intrinsic Damage Thres- hold Study--Study Laser Damage Phenomena	Optics	Goal--Multilayer coatings with in- creased damage resistance. Sig- nificant progress in film produc- tion, etc.	130	130	1.0 1.0	Fed--Dept. Energy
NWC 147	Analysis and Testing	Preparation and Char- acterization of Amorphous Silicon--More Efficient Solar Cells	Optics	Develop techniques useful in manufac- ture.	59	141	0.6 1.6	Fed--Dept. Energy Solar Energy Research Inst.
NWC 151	Analysis and Testing	Synthesis Studies-- Employ New Oxidant Peroxydisulfuric Acid in Synthesis of New Compounds	Organic Chemistry	1,2,3,5-Tetranitro- benzene and Pentanitro- benzene synthesized.	70	0	1.0 0.0	Fed--Dept. Energy Lawrence Livermore Lab.
NWC 152	Analysis and Testing	Surveillance; ROCO2 Optical Components-- For Rocket-Borne Ozonesonde ROCO2	Atmospheric Physics	Spectrophotometric calibrations and requisite calcula- tions of effective ozone absorption coefficients. Aging characteristics of interference filters.	37	50	0.5 0.6	Fed--NASA Goddard Space Flight Ctr.
NWC 153	Analysis and Testing	Develop New Procedure to Synthesize TATB	Organic Chemistry	1,3,5-Triamino-2,4,5- Trinitrobenzene.	100	100	1.4 1.4	Fed--Dept. Energy Los Alamos Scien. Lab.
NWC 154	Analysis and Testing	Establish Combustion Instability Characteris- tics for Space Shuttle Solid Rocket Motor	Propellants	Combustion stability of igniter propellants. Thrust perturbations of booster motor.	37	38	0.3 0.3	Fed--NASA
NWC 156	Analysis and Testing	CADM Submunitions Program To Perforate 8-Inch Triple-Reinforced Concrete	Explosives and Aeronautics	Perforation measure- ments. Ability of submunition fins to stabilize.	58	0	0.1 0.0	Ind--Aerofjet Ord- nance and Mfg. Co.

Performing Activity	Technology Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Sponsor
					FY79	FY80	Man-Years FY79 FY80	
NWC 157	Analysis and Testing	Vought Free-Flight Rocket Track Test--Dispersion of Subpacks, Munitions Released in Free-Flight	Explosives and Aeronautics	High-speed track test conducted.	111	0	0.1 0.0	Ind--Vought Helicopter Inc.
NWC 158	Analysis and Testing	Firestone F-18 Fuel Tank Test--Structural Information on Takeoff and Landing	Aeronautics	Good results from 6 data runs.	72	0	0.1 0.0	Ind--Firestone Coated Fabrics Co. Inc.
NWC 159	Analysis and Testing	Martin-Marietta Submissile Dispersion Test; Dynamic Track Test	Explosives and Aeronautics	Dynamic track test for submissile dispersion and flight characteristics.	60	0	0.2 0.0	Ind--Martin-Marietta Aerospace
NWC 160	Analysis and Testing	Assault Breaker, Verify Aerodynamics of Submunitions	Aerodynamics	Cost estimate and test plan prepared.	20	0	0.0 0.0	Ind--Hughes Aircraft
NWC 162	Analysis and Testing	NASA Galileo Probe; Verify Structural Integrity, etc., of Parachutes	Aeronautics	High-speed drop test vehicles being modified. Test instrumentation being designed or procured.	123	0	1.5 0.0	Fed--NASA Ames Research Center
NWC 163	Analysis and Testing	Automatic Deployed Survival Kit	Escape Systems	Will be demonstrated for installation into T-2 aircraft on Japanese Air Self-Defense Force.	13	0	0.0 0.0	Ind--American Safety Flight System
NOSC 177	Analysis and Testing	Calibration and Evaluation Services (Work in Support of DOD Contracts)	Evaluation	Services performed on individual basis.	22	24	0.5 0.5	Industry
NOSC 188	Analysis and Testing	Analysis of U.S. Coast Guard Systems, Coastal Surveillance	Operations Research	10-year operational systems plan, catalog of required task capabilities for each platform class, and trade-offs developed.	310	100	3.0 1.0	Fed--U.S. Coast Guard
NOSC 194	Analysis and Testing	USCG Evaluation of SSP (Swath-Type) Kaimalino	Marine Engineering	Sea trials completed.	58	0	0.3 0.0	Fed--U.S. Coast Guard
NOSC 199	Analysis and Testing	Methods for Trace Metals in Seawater by Flameless Atomic Absorption Spectrometry	Inorganic Chemistry	60 seawater samples analyzed for copper and zinc.	10	0	0.2 0.0	NP--APL/JHU

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years				Sponsor
					FY79	FY80	FY79	FY80	
NRL 220	Analysis and Testing	Corrosion Resistance of Steel Piling	Materials Research Energy	Helped on design of foundation piling for nuclear power plant.	2	8	0.0	0.0	Fed--Nuclear Regu- latory Comm.
NRL 206	Analysis and Testing	Alloy Fracture Micro- mechanisms	Microstructural Analysis	Analysis on propeller shaft failure on a com- mercial tanker (Coast Guard)	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 216	Analysis and Testing	Surface Analysis of Guid- ance System Components	Surface Analysis Techniques	Effort to identify source of noise in slip ring assemblies. New approaches to organic film identification.	35	60	0.5	0.6	Fed--Strategic Systems Project Office
NRL 218	Analysis and Testing	Alloy Fracture Micro- mechanics (Bridge Wires)	Failure Analysis, Fracture	Determine why wires on Mesana Narrows suspen- sion bridge breaking.	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 219	Analysis and Testing	Alloy Fracture Micro- mechanisms (Helicopter Rotor Spindle)	Failure Analysis	Remedy for Sikorsky H-3 rotor spindle fractures.	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 222	Analysis and Testing	Welding Metallurgy	Materials Research	Led conference on laser welding for Amer. Soc. Metals.	188	197	2.7	2.8	Fed--Off. Nav. Res.
NRL 224	Analysis and Testing	Laser Processing of Materials, Improved Corrosion Resistance, Strength	Materials Research, Method- ology	Industry exploring NRL's laser-spray pro- cess and laser-melting of plasma-spray coatings.	310	220	3.7	2.6	Fed--Off. Nav. Res./ DARPA
NRL 229	Analysis and Testing	Computer Program for Spec- tra Analysis	Materials Analysis	Computer operation speeded up with addi- tion of fast approxi- mation to complementary error function.	15	0	0.2	0.0	Fed--NAVAIRSYSCOM
ONR 245	Analysis and Testing	Theory of Fault Diagnosis in Linear Systems	Electronic Engineering	Established a measure of testability and an efficient algorithm for solving the fault diagnosis equation.	15	--	0.1	--	Fed--Off. Nav. Res.
NAEC 260	Analysis and Testing	Wear Debris Analysis	Wear Analysis	Characterization of wear in oil lubricated systems. Standardi- zation of ferrographs.	--	--	--	--	Foreign--Great Britain
NAEC 261	Analysis and Testing	Infrared Thermography as Inspection Technique	Nondestructive Testing	Quantification of flow type size, and depth detectable in com- posites.	46	47	1.5	1.5	Fed--NAVAIRSYSCOM

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Man-Years			Sponsor
					FY79	FY80	FY79	FY80	FY79	FY80	
NAVAIR 42	Communications	Microstrip Dipole Antennas for Tactical Missile Use	Electronics	Potential application to TV, radio, direction finding, aircraft altimeter, etc.	--	--	--	--	--	--	Fed--NAVAIRSYSCOM
NOC 81	Communications	Foreign Officer Training Program in Hydrographic Surveying/Coastal Oceanography	Marine Technology Hydrography	In FY 79, 19 officers from 6 countries trained.	--	--	4.0	4.0	--	--	Fed--CNO Security Assistance Training Program
NTTC 123	Communications	Extremely Wide Angle Visual Displays	Visual Systems, Visual Simulation	Could have impact on visual systems throughout aviation community	200	--	4.0	--	--	--	Fed--NAVMATCOM
NUSC 132	Communications	Improve Information Retrieval Capabilities, New Methods of Communication	Computer Technology	Training on Electronic Information Exchange System (EIES) as nucleus of a national innovation network.	--	--	--	--	--	--	NP--R.I. League of Cities and Towns, New England Innovation Group, Fed Lab Consortium
NWSC 167	Communications	Submarine Signal Fuze for Launching markers underwater.	Instrumentation	Uses seawater battery, activated in 6-8-ft water.	--	--	--	--	--	--	Fed--NAVSEASYSYSCOM
NOSC 176	Communications	Polar Communication Prediction System	Electromagnetic Environment Prediction	System using solar/conospheric disturbance techniques demonstrated to FAA.	50	0	0.5	0.0	0.0	0.0	Fed--Dept. Trans., FAA
NRL 207	Communications	Electronic Components for Expendable ECM	Electronic Countermeasures	Characterization of expendable TWTs. Cathode structures elevated. Spectrometer membrane design.	440	900	1.3	1.3	1.3	1.3	Fed--NAVELCSYSCOM
NRL 210	Communications	Acousto-Optics Technology Advancement	Optic Imager/Detector	Acousto-optic techniques for DOA and TOA. Increase in imager dynamic range, investigate crystals.	762	700	2.7	3.3	3.3	3.3	Fed--NAVELCSYSCOM
NRL 225	Communications	Sonar Ceramic Stability	Materials Research Sound Transducers	New composite concept to improve sonar sensors. Important operation/logistic advantages.	35	45	0.4	0.4	0.4	0.4	Fed--Off. Nav. Res.
NRL 230	Communications	Gyrotron Traveling Wave Amplifier	Electronics Development	Design for gyrotron travelling wave amplifier operating at second cyclotron harmonic complete.	0	0	0.0	0.0	0.0	0.0	Fed--Rome Air Development Ctr.

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Man-Years			Sponsor
					FY79	FY80	FY79	FY80	FY79	FY80	
NRL 231	Communications	High-Power Millimeter-Wave Amplifier	Electronics Development	Computer program for calculating optimum operating parameters for gyrotron travelling wave amplifier.	0	0	0.0	0.0	0.0	0.0	Fed--Rome Air Development Ctr.
NRL 232	Communications	Millimeter-Wave Power Tube Development	Electronics Development	Exchange info on gyrotron. Raytheon to evaluate NRL beam collectors and tube processing.	0	0	0.0	0.0	0.0	0.0	Fed--Nav. Res. Lab.
NRL 233	Communications	Low-Bit-Rate Digital Speech	Signal Processing	Large-scale integration of speech processors. Psychoacoustic interactions.	400	400	5.0	5.0	5.0	5.0	Fed--NAVELSYS/COM
NRL 234	Communications	Microwave Scattering Patterns	Electronics Radar, Communications	Obtain model of electromagnetic scattering patterns from the ocean. Radar target classification in ocean environments.	84	90	1.6	1.4	Fed--Off. Nav. Res.		
NRL 237	Communications	Sonar Transducer Reliability Improvement Program (STRIP)	Materials Research, Sonars, Transducers	Annual review attended by industry, workshops, publications.	495	495	10.0	9.5	Fed--NAVSEASYS/COM		
ONR 244	Communications	Conducting Polymers Based on Polyacetylene or (CH) _x	Polymer Chemistry Synthesis of Conducting Polymers	Rapid transfer to industry. Promise of economical plastic solar cells--a new option in solving energy crises.	120	120	2.0	2.0	Fed--Off. Nav. Res.		
ONR 247	Communications	Ohmic Contacts in Gallium Arsenide	Electronic Engineering Electromagnetics	Published how to improve metallic-ohmic contacts to gallium arsenide devices.	0	0	0.0	0.0	Fed--Off. Nav. Res.		
ONR 248	Communications	Gold-Germanium Refractory Contacts	Electronic Engineering	Provided how to improve production yield and performance of gallium arsenide microwave devices.	20	0	0.2	0.0	Fed--Off. Nav. Res.		

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
DWT 08	Computer Technology	Computer-Aided Ship Design and Construction	Computer-Aided Ship Design	Development and dis- semination of computer programs; available for Navy work.	400	700	2.0	4.0	Fed--NAVSEASYS
NADC 36	Computer Technology	Predictive Codes for En- gine Materials and Costs	Engine Cost Analysis	Modification of com- puter codes continuing.	0	0	0	0.0	Fed--NASA Lewis Research Center
NORDA 75	Computer Technology	Optical Character Recog- nition, Improve Capa- bility to Process Data	OCR--Computer Hardware/Software	Cognitive handprinted input trained recur- sively analyzer (CHITRA) method of recognizing handwritten characters developed.	283	237	1.0	1.0	Fed--Defense Mapping Agency
NOC 87	Computer Technology	Automated Techniques for Detecting Ocean Thermal Fronts	Imagery Pattern Recognition	Papers released.	32	32	1.0	1.0	Fed--NAVOC
NSWC 111	Computer Technology	Cross-Tie Memory, High- Density, Nonvolatile	Thin-Film Memory	Transferred to indus- try, which is further developing.	300	220	3.2	3.3	Fed--NAVSEASYS
NTTC 122	Computer Technology	Application of Voice Technology in Automated Systems	Voice Technology	Speech technology to replace keyboard data for flight plan amend- ments.	225	225	4.5	4.5	Fed--NAVMAATCOM
NOSC 187	Computer Technology	Impact of a Formal Computer-Based Informa- tion System on Informal Info Networks	Information Transfer, Man- Machine Rela- tions	Groups of people, and computer-based systems, selected. Analyses under way.	70	0	0.6	0.0	Fed--Nat'l. Science Foundation
NOSC 189	Computer Technology	Small Boat Simulator, Training Operations	Display Devices and Equipment	Trailer delivered, consoles installed. Radar simulator, flying spot scanner, software nearly complete.	352	111	3.9	1.0	Fed--U.S. Coast Guard
NOSC 196	Computer Technology	Image Acquisition and Processing (for Automated Mail Handling)	Optics, Com- puter Science	Image capture and analysis system operating. Full- page images at 10 pages/sec acquired.	832	500	7.8	4.0	Fed--U.S. Postal Service
NRL 208	Computer Technology	Computer/Processors for EW/ESM	Technological Improvements	Determining redundancy allowable in EW anal- ysis and evaluation.	94	110	0.5	0.6	Fed--NAVAIRSYS
NRL 209	Computer Technology	Automatic Radar Pattern Recognition	Data Base Management	Enhancement of signal- processing operations in ESM systems.	340	1000	1.5	3.0	Fed--NAVAIRSYS

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years		Sponsor
					FY79	FY80	
ONR 246	Computer Technology	Nonlinear Controllability	Theoretical Math	Complete solution to the controllability problem for a large class of nonlinear systems.	24	15	0.2 0.2 Fed--Off. Nav. Res.
ONR 249	Computer Technology	Data Base Machine	Electronic Engineering	New computer organi- zation customized to perform data storage and retrieval. Order- of-magnitude increase in speed, more easily programmed.	60	60	1.1 1.1 Fed--Off. Nav. Res.
ONR 250	Computer Technology	Personalized Graphics Systems for Automated Maintenance	Human Factors Engineering	Computer-edited made- to-order movie to give expert consultation on repair problems. Re- flects viewer's knowl- edge.	120	170	2.0 3.0 Fed--Off. Nav. Res.
NPS 259	Computer Technology	City Computerized Manage- ment Information System	Computer Applications	Computerized Management information system for city of Santa Fe. Rec- ommended new equipment and software.	--	--	-- State--Santa Fe, NM

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
CEL 01	Energy	Organic Rankine Bottoming System for Diesels to De- crease Fuel Consumption	Air Conditioning, Heating, Light- ing Ventilation	No adverse effect on en- vironment found; Navy- DOE agreement made.	616	120	0.9 1.0	Fed--Dept. Energy and Navy
DWT 20	Energy	WARAD Tandem Propeller Follow-On Program	Hydrodynamics, Tandem Propellers	Design requirements for test propellers being checked.	35	104	0.3 0.7	Fed--Maritime Admin.
NCSC 47	Energy	Ocean Thermal Energy Conversion (OTEC) Heat Exchanger Cleaning	Heat Exchanger Technology	Testing and evaluation of in-situ biofouling countermeasures in potential materials continue.	300	152	4.0 2.5	Fed--Dept. Energy
NORDA 73	Energy	OTEC Flexible Cold Water Pipe	Hi-Strength Fabrics	Evaluation of candi- date designs for OTEC modular experimental platform.	300	75	2.0 1.0	Fed--Dept. Energy
NOC 84	Energy	Magneti: Survey-- Indonesia Straits; To Map Resources	Airborne Magnetic Survey Capability	Data on Sunda Strait and Makassar Strait gathered, processed, and delivered.	--	--	-- --	Foreign-Inter- national Govt.
NOC 88	Energy	OTEC Biofouling Experi- ment in the Gulf of Mexico; to determine harmful effect of marine organisms	Marine Biology	Prediction of macro- fouling organisms and effects over 30-yr. power plant life.	10	5	0.3 0.2	Fed--Dept. Commerce National Data Buoy Office
NSWC 112	Energy	NITINOL Heat Engines-- Convert Low-Grade Thermal Energy to Useful Mech. or Elec. Energy	Thermodynamics	Prototype engines being evaluated. Specialized NITINOLS commercially available.	75	0	1.0 0.0	Fed--Dept. Energy
NSWC 119	Energy	HNS Explosive Evaluation Hexanitrostilbene	Explosives Synthesis	Evaluating process to synthesize; analyt- ical procedures for assay of purity.	52	65	0.7 0.5	Fed--NASA Lyndon B. Johnson Space Center
NUSC 125	Energy	Technical Energy Specialist (IPA)-- Scientific Consultant for Energy Extension Service	Heating, Engineering	Technical energy briefs in response to specific needs.	--	--	-- --	NP--NUSC/Univ. Conn.
NUSC 129	Energy	Energy Conservation in Public Buildings More Efficient Lighting, Heating, Education-- All U.S.	Lighting, Heating, Audiovisual Lab.	Prepared Lighting Efficiency Program, Thermal Efficiency Program underway.	--	--	-- --	Federal

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NWC 133	Energy	Conversion of Solid Waste to Polymer Gasoline	Chemical Engineering	Pyrolysis gas purification subsystems greatly improved, some gasoline produced from organics derived from trash.	46	0	0.4	0.0	Fed--EPA, Environmental Research Center
NWC 134	Energy	COSO Geothermal--Support Joint USN-DOE Drilling Program, Geothermal Reservoir Parameters	Geology and Mineralogy	Testing under way to determine parameters, were productivity.	27	0	0.1	0.0	Fed--Dept. Energy Nevada Oper. Off.
NWC 137	Energy	Research into Pyrolysis of Pure Cellulose and Pure Lignin Powder; Toward Making Petrochem.	Chemical Engineering	Use China Lake entrained flow pyrolysis reactor	25	0	0.2	0.0	Fed--Dept. Energy Solar Energy Research Institute
NPRDC 169	Energy	Energy Link; Catalog of Assistance Sources in Fed Consortium	Data Gathering and Analysis	Energy Link Catalog based on needs of cities and counties. Being edited for printing.	--	30	--	1.0	Fed--Fed. Lab. Consortium
NRL 205	Energy	National Cladding/Duct Materials Development	Microstructural Analysis, Fracture Behavior	Fracture testing of irradiated steel alloys. Phase stability under irradiation determined.	60	75	0.7	0.8	Fed--Dept. Energy
NRL 211	Energy	Monitoring of Nuclear Airborne Materials	Nuclear Chemistry	Very-high-sensitivity carbon-14 detector. Monitoring or release levels associated with fuel processing.	210	270	1.0	1.0	Fed--Dept. Energy
NRL 226	Energy	Fusion Materials Task Groups	Materials Research	Review of DOE Fusion Materials Program. Analysis of ferritic steels for fusion reactors. Stability of irradiated titanium.	100	200	1.0	1.5	Fed--Dept. Energy
NRL 228	Energy	International Group on Cyclic Crack Growth Rate	Materials Analysis Fatigue Crack Growth Technology	Study of effects of reactor operating conditions. Committee organized, research results distributed.	250	250	3.5	3.0	Fed--Nuclear Regulatory Commission
NRL 227	Energy	Task Force on Crack Propagation Technology	Materials Research, Crack Propagation	Develop rules for implementation of crack growth methodology into ASME Boiler & Pressure Vessel Code. Begun with 316 S.S.	0	0	0.0	0.0	NP--Metal Properties Council

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NRL 212	Energy	Laser Chemistry. Effects of Laser Excitation on Catalytic Reactions	Materials Research, Chemical Kinetics	Prototype system, decomposition of formic acid on platinum, produces CO and CO ₂ ; studied under laser radiation.	150	150	2.0	2.0	Fed--Off. Nav. Res.
NRL 214	Energy	Hot Corrosion Prevention in Gas Turbines	Materials Research	Low-temp. not corro- sion results from re- action of SO ₃ in engine gas with oxides on blade surface. Chro- mium effective against this.	365	310	3.9	3.7	Fed--NAVSEASYS COM
NRL 215	Energy	Chelant Boiler Treatment, EDTA	Materials Research	Investigating source of copper in chelant- treated boilers. On- site analytical proce- dure being developed.	--	--	--	--	Fed--NAVSEASYS COM
NRL 223	Energy	Fabrication of New Superconductors	Materials Research	Contract awarded to demonstrate industrial production of multifi- lamentary V ₃ Ga wires.	155	150	2.0	2.0	Fed--NAVAIRSYS COM
ONR 242	Energy	Fuel-Water Emulsification	Chemical Engineering	Application of fuel- water emulsions to diesel engines and boilers. Reduced to fuel consumption and improved performance.	55	--	1.0	--	Fed--Off. Nav. Res.
ONR 243	Energy	Rechargeable Lithium Batteries	Basic Research	Battery based on or- ganic electrolyte con- taining cyclic ethers. Evaluation for Navy, commercial use.	70	200	1.5	5.0	Fed--Off. Nav. Res.

Perform- ing Activity	Technology- Cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	FY80
DWT 09	Environment	Carbon Fiber Protection	Composite Materials	Methods to minimize entry of fibers into critical systems developed. Conformal coatings being evaluated.	490	400	5.0	4.0
								Fed--Rome Air Dev. Cen.
DWT 10	Environment	USCG Marine Sanitation Devices Evaluation	Ship Systems, Maintenance Logistics	Current capabilities and new technology being identified.	32	0	0.4	0.0
								Fed--U.S. Coast Guard
DWT 11	Environment	Recovery Device: Oil/ Water Separator (OWS)	Shipboard OWS Systems	Constraint matrix for evaluation complete.	81	65	1.5	0.8
								Fed--U.S. Coast Guard
DWT 12	Environment	USCG Oil/Water Separator Detergent	Chemistry, Deter- gent Experience	Emulsion stability tests performed. Out- line for engine room cleaning developed.	80	75	0.5	0.7
								Fed--U.S. Coast Guard
DWT 23	Environment	NOAA Current Sensor Experiments for Cable- Body Systems	Hydrodynamics, Environmental Measurements	Current meters calibrated under at- sea conditions.	66	50	0.5	0.4
								Fed--Natl. Oceanic and Atmospheric Admin.
NBIOL 44	Environment	Effect of Energy Conser- vation on Air Hygiene	Bacteriology, Ex- pertise in col- lecting bacteria	Semiautomatic samplers for counting airborne bacteria used to evaluate ventilation.	130	0	2.5	0.0
								Fed--Dept. Energy
NBIOL 46	Environment	Development of an Oil Identification Kit	Chemistry, Thin- Layer Chromatog- raphy	Finger printing on board ship help to identify source of oil slick.	13	0	0.2	0.0
								Fed--Off. Nav. Res.
NCSC 49	Environment	Offshore Pollutant Ef- fects Program; Test Facility	Test and Evaluation; Unique Facility	New seawater pumping system being designed EPA performs tests.	95	150	0.5	1.0
								Fed--EPA, Environ- mental Research Lab
NOC 92	Environment	Experimental Ocean Frontal Analysis Chart	Oceanographic Analysis	Sea-surface tempera- tures in Western North Atlantic pro- vided weekly.	22	22	1.0	1.0
								Fed--NAVOC
NWC 148	Environment	Silver Iodide Pyrotechnic Flares--Interaction of Nucleants With the Atmosphere	Inorganic Chemistry	Accumulation of pyrotechnic formula- tions can be reworked into use in opera- tional programs.	0	0	0.0	0.0
								State--Santa Barbara County

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years				Sponsor
					FY79	FY80	FY79	FY80	
NWC 149	Environment	Inadvertent Weather Modification from Shuttle Launches	Atmospheric Physics	Characterize alum- inum oxide aerosols. Stabilized ground clouds from Kennedy Space Center mea- sured.	55	0	0.2	0.0	Fed--NASA
NWC 150	Environment	Western Kansas Ground Water Study--Provide Consulting Services	Atmospheric Physics	Advise on pyrotechnic capability.	18	0	0.2	0.0	State--Western Kansas Ground Water Dist. #1
NWC 161	Environment	Technical Support in In- stallation of Airborne Research Data System and Other Research Systems	Atmospheric Physics	Provided support to APL as requested.	15	0	0.0	0.0	NP--Johns Hopkins Univ.
NWSC 166	Environment	Method for Disposing of Red Phosphorus Composition from Markers, Signals	Chemical Engineering	Incineration complex combined in the breakdown machines to make pilot plant. Operation proved technical soundness and feasibility environment ac- ceptability.	--	--	--	--	Fed--NAVSEASYSOCM
NOSC 182	Environment	Environmental Response and Effects (Following Accidental Marine De- position of Radioactive Material)	Radiation Shielding	Samples being analyzed.	50	50	0.3	0.3	Fed--Dept. Energy Safety/Isotope- Fuel Branch
NOSC 190	Environment	Merchant Marine Occu- pational Noise	Acoustics, Human Factors	Background info on noise on U.S. merchant ships. Noise standards recommended.	56	120	0.8	1.3	Fed--U.S. Coast Guard
ONR 241	Environment	Shipboard Solid and Liquid Waste Storage and Transfer Pollution Abatement	Chemical Engineering, Pollution Abatement	Elimination of waste discharge from Navy vessels. Holding tank systems for all craft.	55	--	1.0	--	Fed--Off. Nav. Res.
ONR 253	Environment	3-D Water Flowmeter	Electrical Engineering	Acoustic current meter upgraded per- formance of new sewage treatment plant.	0	0	0.0	0.0	Fed--Off. Nav. Res.

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Sponsor
					FY79	FY80	Man-Years FY79 FY80	
NAEC 262	Environment	Jet Engine Noise Suppression	Testing jet engines	Development of ex- haust noise suppressor configuration for test cells for out-of-air- frame engines. Air- craft acoustic en- closures.	--	--	--	Fed--NAVJATCOM

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
DWT 13	Fire and Safety	Inspection Testing-- Lifesaving Equipment	Inspection and Testing	Tests of individual items of lifesaving equipment (life jackets, life rafts, etc.).	60	67	0.8 0.8	Fed--Def. Const. Supply Ctr.
DWT 16	Fire and Safety	Fire Resistance Tests (Hydraulic Fluids for Shipboard)	Inspection	Has only facility (modified compression fire-resistant engine) to test shipboard hydraulic fluids for Navy.	10	27	0.1 0.2	Fed-Def. Gen. Supply Ctr.
NAVAIR 41	Fire and Safety	Swimmer Protective Helmet	Human Factors	May be utilized in underwater construc- tion, rescue, salvage operations.	--	--	-- --	Fed--NAVAIRSYSCOM
NATC 43	Fire and Safety	Head-Up Display to Simu- late Aircraft	---	See NAVAIRSYSCOM	--	--	-- --	Fed--NAVAIRSYSCOM
NSWC 117	Fire and Safety	Reactor Safety Studies, Hydrodynamic Loads from Accidents	Safety Engineering Hy- drodynamic and Structural Comput.	Services provided as NRC requests, e.g., Three Mile Island, Clinch River	16	5	0.3 0.1	Fed--Nuclear Regu- latory Commission
NOSC 185	Fire and Safety	Kerosene Jet Breakup Study (Fire Suppression Following Crashes)	Fuels, Drag Reduction Additives	8 additives tested. General correlation of spray inhibition with drag reduction measurements shown.	15	0	0.2 0.0	Fed--NASA Ames Research Center
NRL 217	Fire and Safety	Workshop--Control of Ship- board Damage	Damage Control	Seek participation of industry in formulating R&D program plan for fire protection and damage control on ships.	--	--	-- --	Fed--NAVSEASYSYSCOM
ONR 252	Fire and Safety	Fire Drill for Water from Ice	Electrical Engineering	Electrically, powered thermal drill for penetrating Arctic ice effective for winter firefighting.	100	100	1.0 1.0	Fed--Off. Nav. Res.
NPS 257	Fire and Safety	Nondisintegrable Burn Tower, CTIP Project, IPA assignment	Construction Engineering	Tower to stand up with repeated use construct- ed of porous concrete blocks reinforced with steel rod.	--	--	-- --	State--Carson City, NV

Performing Activity	Technology Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NAVAIR 39	General Assistance	Water Displacing Corrosion Prevention Compound	Materials Research and Development	New material for superior to prior corrosion-control compounds. Numerous potential applications.	35	35	1.0 1.0	Fed--NAVAIRSYSCOM
NAVSEA 103	General Assistance	Mid-Atlantic Region Technology and Business Opportunities Conference 20 Sep 79	Weaponry	Provided small business with potential opportunities for NAVSEA procurement participation.	--	--	-- --	Ind--Various
NWC 142	General Assistance	Operation of the Federal Laboratory Consortium for Technology Transfer	Technology Transfer	Spring meeting held, Fall meeting planned. Workshops, seminars, newsletter.	182	220	0.5 0.5	Fed--National Science Founda.
NWC 164	General Assistance	Federal Laboratory Consortium for Technology Transfer--Santa Fe, Oct 78 and NBS May 79	Technology Transfer	Semiannual meetings, executive committee meetings.	0	0	0.0 0.0	Fed--Independent Research and Development/Technology Utilization (IRED/TU) Office
NWC 165	General Assistance	Technology Transfer Exhibit Energy Fair, State and Local Government	Technology Transfer	Fairs in LA, Hartford, supply state and local with info on NWC.	0	0	0.0 0.0	Fed--IRED/TU Office
USMA 172	General Assistance	Enrichment Program for Gifted School Children--Extend Education	Math., Physical Science, Comp. Sci.	7 minicourses were taught. FY 80 will concentrate on math and computer science.	20	21	0.3 0.3	State--Anne Arundel County Schools
NRL 235	General Assistance	Circuit-Riding Technology Agent in Community Technology Initiatives Program (CTIP) (Rockville)	General Assistance	Service in local governments contributions in sewage disposal, water quality, air pollution, fire suppression, etc.	40	40	1.0 1.0	NP--National Science Founda. (CTIP)
NRL 201	General Assistance	Electronic Materials Technology	Metallography	Method developed to grow high-purity semi-insulating gallium arsenide single crystals, industry evaluating, using.	--	--	-- --	Fed--NAVJATCOM
NRL 203	General Assistance	Ultrapurification of Gaseous Hydrogen Fluoride	Chemical Engineering	Perfect method for removal of water and most carbonaceous contamination. Shared with industry.	0	0	0.0 0.0	Fed--Nav. Res. Lab. and Perkin Elmer

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NPS 254	General Assistance	Utilization of RDT&E Investment at CEL	Research Utilization	Improve utilization of product from CEL. Evaluate current system. Effective technology transfer.	28	0	0.3 --	Fed--NAVPAC
NPS 255	General Assistance	Technology Transfer Symposium on Research Utilization	Research Utilization	Technology transfer effort for the future should be one towards a pull for new technol- ogy.	5	0	0.1 --	Fed-- (NAVMAFOM, NAVPAC, NPS)
NPS 256	General Assistance	Conference for the Forest Service	Research Utilization	To establish a national policy for utilization of Forest Service research results.	--	--	-- --	Fed-- (U.S. Forest Service)

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
CEL 02	Health and Medicine	Brain Model for Study of Response/Injury Relation- ship	Bioengineering, Solid Mechanics	Small primates being studied; injuries com- puter program written.	138	83	1.2 0.8	Fed--Dept. Trans.
NADC 37	Health and Medicine	Efficacy of Symptomatic G-Suit Inflation	Stress Physiology	Human performance measured during centrifuge runs	26	0	2.4 0.0	Fed--NASA Lyndon B. Johnson Space Center
NBIOL 45	Health and Medicine	Study of Antiherpovirus Material from Algae	Virology Tissue Culture Expertise	Polysaccharide active in vitro; a protein with in vivo activity.	30	30	0.8 0.8	Fed--Sea Grant College Program
NHRC 50	Health and Medicine	Program for Medical Care of POWs from All Wars	Analysis, Medical Exams, Effects of Captivity	Continued consultation with VA, 5-year follow-up on Vietnam POWs; data collected.	1	1	0.1 0.1	Fed--Veterans Admin.
NHRC 52	Health and Medicine	Conference on Navy Occupational Health	Behavior Science, Organizational Dev. Theory	Conference proceedings circulated	25	0	0.3 0.0	Fed--Off. Nav. Res. and NMR&D Comm.
NHRC 53	Health and Medicine	Research Findings in Areas of Stress-Related Illnesses	Relationship between Stress and Illness	World literature on effects of life changes, development of illness-- a major research endeavor.	3	3	0.2 0.2	Fed--Various
NHRC 54	Health and Medicine	Stress-Related Dis- ability Retirements	Epidemiological Research	Publicity continues and more data forthcoming.	1	1	0.1 0.1	NP--Local Govern- ment Assistance Task Force (FLC- Far West Region)
NHRC 55	Health and Medicine	Understanding Sleep Disorders--Education of Professionals	Sleep and Sleep Disorders	Education continuing work shops.	0	0	0.1 0.1	State--Univ. Calif. BUmed and Surgery
NHRC 56	Health and Medicine	Education of Public in Sleep, Dreams, and Brain- wave Activity	Laboratory Research	College settings, media.	0	0	0.1 0.1	Fed--Various
NHRC 57	Health and Medicine	Education of Physicians on Sleep, Sleep Disorders and Pills	Sleep Disorders, Effect on Per- formance	Consultation to physicians.	0	0	0.1 0.1	Fed--Various
NHRC 58	Health and Medicine	Health and Safety of Shift Workers--Interna- tional Meeting Sep 79	Work-Sleep Schedules	Proceedings being compiled, yearly meeting proposed.	40	0	0.1 0.1	Ind--Upjohn Inter- national and Navy
NHRC 59	Health and Medicine	Effects of Stress or Simulated Combat on Unit Readiness/Effectiveness	Sleep Deprivation	Background on re- search supplied.	0	0	0.0 0.0	Fed--U.S. Army Inst. for the Behavioral and Social Sciences

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NMRC 60	Health and Medicine	POWs--Medical Followup Research	Medical and Family Research on POWs	Prolonged Stress Branch continues medical followup.	0	0	0.0	0.0	NP--Various POW Organizations
NMRC 61	Health and Medicine	Overview of Current Family Research Efforts in Navy Populations	Health of the Military Family	Overview of findings and methodologies of family research pro- vided.	1	0	0.0	0.0	Fed--Various
NMRC&D 62	Health and Medicine	Design and Test of an Integrated Modular Clini- cal Laboratory for Ship- board Use	Bioengineering, Medical Equipment	Extensive clinical laboratory testing.	58	--	0.9	--	Fed--NMRC&D Comm.
NMRC&D 63	Health and Medicine	Study of Louse Infesta- tion in Ethiopia	Entomology, Epidemiology	Physical, behavioral, cultural, physiological factors included in publication.	3	--	0.5	--	Fed--NMRC&D Comm.
NMRC&D 64	Health and Medicine	Recompression Treatment Tables Used Throughout the World by Government and Industry	Hyperbaric Physiology	World-wide recom- pression diving procedures available (DTIC AD A056666).	39	--	0.7	--	Fed--NMRC&D Comm. and NAVSEASYSKOM
NMRC&D 65	Health and Medicine	Portable Field Kit for Rapid Disease Diagnosis	Microbiology Medical Instru- mentation	Kit undergoing extensive testing and evaluation.	53	76	0.8	0.9	Fed--NMRC&D Comm.
NMRC&D 66	Health and Medicine	Navy Amphibious Medical Evacuation Simulation (NAMES II) Computer Model	Clinical Medi- cine, Operations Research	NAMES II expanded from combat zone to CONUS, Applicable to medical emergencies.	75	75	0.6	0.6	Fed--NMRC&D Comm.
NMRC&D 67	Health and Medicine	Remote Medical Diagnosis System (RMDS) with Slow- Scan TV	Biomedical Engineering, Communications	RMDS for ships and diagnostic centers being spec'd. Video via satellite.	200	800	1.8	2.3	Fed--NMRC&D Comm.
NMRC&D 68	Health and Medicine	Management of War In- juries to the Jaws and Related Structures Textbook	Clinical Medicine	Publication includes data since 1968, GPO Stock No. 008-045-00018-6.	--	--	--	--	Fed--NMRC&D Comm.
NMRC&D 69	Health and Medicine	Portable Life Support Stretcher Self-Contained Unit	Biomedical Engineering, Medical Equip- ment	5 units fabricated and under evaluation.	50	40	0.7	0.3	Fed--NMRC&D Comm.
NMRC&D 70	Health and Medicine	Medical Backpack-- Transport Life Support to Shipboard Casualty	Medical and Hospital Equip- ment, Biomed- ical Engineering	3-month evaluation by ships and research and rescue yielded favorable recommenda- tion.	8	80	0.2	0.4	Fed--NMRC&D Comm.

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NMC 155	Health and Medicine	Automatic Tissue Culture Colony Counter	Optics	Improved second version of cell colony monitor. Consists of optics mechanical reticle and sample drive, electronics.	14	0	0.2	0.0	Fed--HEW
NOSC 193	Health and Medicine	Crew Performance Assess- ment (Effect of Ship Motion)	Information Theory, Psychology	3 studies under way. 3 classes of ships under operating conditions.	86	0	1.1	0.0	Fed--U.S. Coast Guard
NOSC 197	Health and Medicine	Human Factors Technology Transfer--Mobility for Paraplegics	Bioengineering Prothetics	Wheelchair ambulator completed. Wheel- chair to integrate fabricated. Whole system being tested.	106	14	1.2	0.1	Fed--Veterans Admin.
NRL 236	Health and Medicine	Ultrasonic Pressure/ Intensity Levels Accept- able for Human Tissue	Acoustic Impulse Technology	Acoustic impulse from thick PZT plates has been narrowed to give an effective bandwidth of about 15 MHz.	30	10	0.3	0.1	Fed--Food and Drug Admin. Bureau of Radiological Health
NPS 258	Health and Medicine	Change in Asphalt Composition	Chemical Engineering, Environmental Health	New technology to eliminate use of carcinogens in asphalt.	--	--	--	--	State--Carson City, NV

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Man-Years			Sponsor
					FY79	FY80	FY80	FY79	FY80	FY80	
NADC 35	Instrumen- tation	Retrodirective Array Development/Evaluation for All-Weather Iden- tification	Radar Systems, Sensor Develop- ment	Radar delivered array evaluated, report submitted	350	0	2.0	0.0	0.0	0.0	Fed--Dept. Trans., U.S. Coast Guard
NAVAIR 38	Instrumen- tation	Portable Hydrogen Measuring System	Materials Research and Development	Uses barnacle electrode measuring system. Po- tential wherever there is high-strength steel.	30	30	1.0	1.0	1.0	1.0	Fed--NAVAIRSYSCOM
NCSC 48	Instrumen- tation	Determine Beach Traversa- bility in an Amphibious Operational Area	Electro-Optic Hydrographic Mapping	Aircraft-mounted sensor technique workable in bad weather.	197	240	1.0	1.2	1.2	1.2	Fed--NAVAIRSYSCOM
NORDA 72	Instrumen- tation	Expendable Current Pro- filer, Instrumentation for Measurement of Hori- zontal Currents	XBT Technology Geomagnetic Electro-Kineto- graph	Instrument in produc- tion, sampling tech- niques demonstrated. NAVOCEANO to include in surveys.	180	100	1.5	1.5	1.5	1.5	Fed--NORDA
NORDA 74	Instrumen- tation	Thermistor Array Develop- ment, Moored, Long-Term At-Sea Operation	Kevlar Cable, Semiconductor Sensors	Design complete, array fabricated.	70	--	0.7	--	--	--	Fed--NOAA Data Buoy Office
NORDA 76	Instrumen- tation	Remote Ocean Subsurface Temperature Profiler	Laser, Remote Sensing	Optical and electronic, components fabricated, testing begun.	12	21	0.2	0.3	0.3	0.3	Fed--Nav. Res. Lab.
NORDA 77	Instrumen- tation	Towed Ocean Density System, Towed Sensor Array	Kevlar Cable, Semiconductor Sensors	Design complete, fabrication begun.	185	170	2.5	2.7	2.7	2.7	Fed--NORDA
NORDA 79	Instrumen- tation	Easily Deployable Sub- surface-Tethered Vehicle That Can Sample the Water Column	Variable Buoy- ancy, Satellite Transmission	Construction complete, prelim- inary tests made.	250	--	2.0	--	--	--	Fed--NORDA
NORDA 80	Instrumen- tation	Versatile Experimental Kevlar Array--for Deployment in Ocean	Navy Cable Development Technology	Development of versatile experimental KEVLAR array (VERA) program.	308	520	5.0	3.7	3.7	3.7	Fed--NORDA
NOC 82	Instrumen- tation	Indonesian/US Hydro- graphic Survey Operations	Coastal Hydro- graphic Surveys	2 large areas now being surveyed. Aid to Indonesian economy.	--	--	--	--	--	--	Fed--Def. Mapping Agency, NAVOC
NOC 83	Instrumen- tation	Joint US/Republic of Korean Survey Operations Coasts and Harbors	Coastal Hydro- graphic Surveys	75% of both ROK coastlines complete. Surveys continue.	--	--	--	--	--	--	Fed--Def. Mapping Agency, NAVOC
NOC 85	Instrumen- tation	Hydrographic Survey Assistance Program for Other Governments	Coastal Hydro- graphic Surveys	1.3K mile completed in Panama OPS.	--	--	--	--	--	--	Fed--Def. Mapping Agency, NAVOC

Performing Activity	Technology-Cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Man-Years		Sponsor
					FY79	FY80	FY79	FY79	FY80	
NOC 89	Instrumentation	Instrumentation Test Services	Pressure Chamber Design	Testing biological tracking enclosures. Repair underwater measurement system.	2	3	--	--	--	Fed--NOAA, Dept. Commerce
NOC 90	Instrumentation	Instrumentation--Transducer Performance Study of Bubble Sweepdown	Hydrographic Coastal Survey, Ocean Engineering	Extending transducer below bottom of launch improved data collection.	48	--	0	0.0	0.0	Fed--Def. Mapping Agency
NOC 95	Instrumentation	Instrumentation Calibration Services for Meteorological Systems	Precision Measurement	Meteorological wind and direction sensors calibrated.	1	2	0.0	0.0	0.0	Ind--Production Control Systems Inc.
NOC 96	Instrumentation	Calibration for Secondary Transfer Standards for Pressure Measurements	Precision Measurement	Quick reaction for dead-weight testers.	1	1	0.0	0.0	0.0	Ind--Avondale Shipyard, New Orleans
NOC 97	Instrumentation	Repair and Calibration Services of General-Purpose Test Equipment	Standards Laboratory	Repaired and calibrated oscilloscopes, signal generators, etc.	0	0	0.0	0.0	0.0	Ind--Bay Technical Associates Inc.
NOC 98	Instrumentation	Repair and Calibration of Instruments to Monitor Nuclear Reactor Parameters	Standards Laboratory	100 items of general-purpose electronic test equipment processed. Ongoing	5	10	0.0	0.0	0.0	Ind--Louisiana Power and Light
NOC 99	Instrumentation	Repair and Calibration of Instruments to Monitor Nuclear Reactor Parameters	Standards Laboratory	110 items processed. NRC requirements must be met.	2	10	0.0	0.0	0.0	Ind--Mississippi Power and Light
NOC 100	Instrumentation	Test and Calibration Services Mechanical Standards	Precision Measurement	Mechanical standards refurbished.	1	3	0.0	0.0	0.0	Ind--M-R-S Mfg. Co.
NOC 101	Instrumentation	Repair and Calibration of Meteorological Sensors	Precision Measurement	113 sensors calibrated. Used to monitor air quality in all major cities.	8	10	0.0	0.0	0.0	Ind--NUS Corp.
NOC 102	Instrumentation	Calibration Services on Deep-Sea Reversing Thermometers	Precision Measurement	Deep-sea reversing thermometers calibrated.	0	1	0.0	0.0	0.0	State--So. Carolina Wildlife and Marine Resources Dept.
NEWSIES 108	Instrumentation	Two-Wire Telephone Data System Remote Control System to Start, Stop, Tune Receivers, Recorders	Microprocessor Technology	Building RF assembly for antenna assembly on top a ship's mast.	1	5	0.2	0.2	0.2	Fed--NAVSEASYSOOM

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NSWSES 109	Instrumen- tation	Improved Low-Noise Telemetry Receiver Assembled From Modular PC Assembly	Microprocessor Technology	2 receivers com- pleted and tested, 5 under construction.	25	25	0.5 0.5	Fed--NAVSEASYSOOM
NSWSES 110	Instrumen- tation	Dynamic Radio-Frequency Tester, Signal Simulates Missile in Flight	Microprocessor Technology	2 improved dynamic testers under con- struction.	20	20	0.3 0.3	Fed--Navy NATO SEASPARROW
NRL 202	Instrumen- tation	Semiconductor Materials, Preparation for Elec- tronics Applications	Metallurgy	Procedure for in-situ etch of III-V com- pound substrates prior to growth by liquid phase epitaxy of III-V layers having elec- tronics applications.	--	--	-- --	Fed--Nav. Res. Lab.
NRL 204	Instrumen- tation	Controlled Porosity Dispenser Cathode Development	Microwave Tube Components	Controlled pore sur- face fabricated using modern microelectronic photolithography.	--	--	-- --	Fed--NAVELECSYSOOM

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Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NCSC 174	Law En- forcement	Waterborne Intrusion De- tection System--Sensors for Waterborne Intruders	Automatic Electronic Sig- nal Processing	3 sensors under de- velopment: bistatic doppler sonar, target detection, and acoustic interferometer wader.	1220	2150	3.0	7.0	Fed--Physical Security Systems Directorate ESD/ AFSC/USAF
NSWC 114	Law En- forcement	Self-Powered Vehicle Detector, Detects Vehicles on Any Roadway	Magnetic Surveillance Technology	20 system built and now being evaluated. Potential for traffic control.	50	0	1.0	0.0	Fed--DOT Fed. Highway Admin.
NSC 180	Law En- forcement	E/O Character Recognition Study. Using Video Sig- nals from Laser-Scanner TV System, Identify Alphanumeric Auto License Plates	Optical Detection	System of state-of- the art components analyzed. A 5% error rate cannot be met with current sensor.	12	0	0.2	--	Fed--Dept. of Justice Immigra- tion and Naturali- zation Serv.

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
CEL 04	Marine Technology	Antifouling Marine Con- crete to Line Ducts and for Floating Structure	Ocean Materials Science, En- vironment	Test cylinders exposed in fouling environment. Monthly evaluation continues.	50	0	0.4 0.0	Fed--Dept. Energy
DWT 21	Marine Technology	Investigation of Sea- keeping and Maneuvering Characteristics of Various Ships	Hydrodynamics, Rudder Roll Sta- bilization (RRS)	RRS improvements complete. Corrective actions being imple- mented on cutters.	211	248	2.0 2.0	Fed--U.S. Coast Guard
DWT 31	Marine Technology	Integrated Tug/Barge Concept	Ship Concept Design	OPNAV directed more evaluation of concepts for destroyers and sub. tenders.	--	--	-- --	Fed--NAVSEASYSOM
NORDA 78	Marine Technology	Fiber-Optics Applica- tions to Specific Ocean Measurement Projects	Oceanographic Instrumentation	Technology summary in progress.	60	80	0.8 0.6	Fed--NORDA
NOC 86	Marine Technology	Screening Test of Marine Wood Preserva- tives (3 Marine Test Sites)	Marine Biology	Panels exposed for 2 years, exposures continuing forbarer, fungi resistance tests	0	0	0.0 0.0	NP--International Research Group on Wood Preservation
NOC 91	Marine Technology	Calibration Services for Temperature- Measuring Current Meters	Precision Measurement	10 current meters calibrated using unique facility for ocean environment simulation.	0	0	0.0 0.0	Fed--U.S. Geologi- cal Survey
NOC 93	Marine Technology	Plastic Teredo-Barrier for Marine Piling-- Control Marine Borers and Fungi	Marine Biology	No attack at 3 test sites. Program con- tinuing.	0	0	0.1 --	Ind--Raychem Corp., Houston
NOC 94	Marine Technology	Instrumentation Calibra- tion Services--Det. Salinity of Unknown Samples	Precision Measurement	Samples analyzed.	0	1	0.0 0.0	Ind--Beckman Instru- ments, Inc.
USNA 171	Marine Technology	European Dredging: A Review of the State of Art; to Improve Slip Maintenance by Navy	Sedimentation Control, Dredging	Attended conferences, visited experts, made site reviews, pre- pared report.	18	0	0.3 0.0	Fed--NAVPAC and Off. Nav. Res.
USNA 173	Marine Technology	Studies of Whales in Iceland and Their Manage- ment; Predict Arrival to Denmark Straits	Oceanography	Icelandic whaling operations observed, and film made.	3	0	0.1 0.0	Fed--Natl. Oceanic and Atmospheric Admin.

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NOSC 181	Marine Technology	Bowhead Whale Acoustics (Are Whales Present in the Beaufort Sea)	Marine Biology	6 aerial surveys yielded sonobuoy tape recordings of a number of Bowhead Whales.	95	0	0.3	0.0	Fed--U.S. Dept. Interior Bureau of Land Mgmt.
NOSC 178	Marine Technology	Scripps Exchange (Provide a Chief Scientist for the Deep Sea Drilling Project)	Deep Ocean Technology	Chief now active at Scripps Institute of Oceanography.	51	0	1.0	0.0	State--Univ. Calif.
NOSC 184	Marine Technology	Solid Rocket Booster (SRB) Dewatering Contingency Equipment (Space Shuttle Program)	Deep Ocean Technology	Two dewatering sets manufactured and acceptance tests witnessed.	116	0	1.6	0.0	Fed--NASA Kennedy Space Ctr.
NOSC 186	Marine Technology	Bowhead Whale Survey Arctic Alaska	Acoustic Detection	Determining number of whales. Project complete.	12	0	0.2	0.0	Fed--National Marine Fisheries
NOSC 195	Marine Technology	Unmanned Free-Swimming Inspection Vehicle Technology	Ocean Engineering	Univ. of New Hampshire and NOSC vehicle platforms have undergone feasibility tests in water.	282	329	2.3	2.2	Fed--Dept. of Interior U.S. Geological Survey
NOSC 198	Marine Technology	Acoustic Projector Installation	Underwater Acoustics	Project complete, Underwater projector installation.	12	0	0.2	0.0	NP--Institute for Acoustic Research
NRL 239	Marine Technology	Ocean Thermal Energy Conversion	Mechanical Engineering	Enhance structural reliability of OTEC cold water pipe by recommending design changes.	--	--	--	--	Fed--National Oceanic and Atmospheric Admin.
ONR 240	Marine Technology	Hydraulic Transmission for Ship Propulsion	Ship Propulsion, Naval Architecture	Seawater as motive fluid, axial turbine provides thrust to propeller. Substantial reductions in weight and space.	45	--	1.0	--	Fed--Off. Nav. Res.

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
DWT 17	Technologi- cal Guid- ance	Investigate Bulk Cavitation Effects and Other Hull Loading Mechanisms for Ship Survivability	Bulk Cavitation Hull Loading	Literature review 50% complete.	35	270	0.6 4.0	Fed--Def. Nuclear Agency
DWT 24	Technologi- cal Guid- ance	Analysis of Helo Decks for 270- and 210-ft Ships, Strength Analyses	Finite Element Analyses	Finite element model for web bending, de- veloped. Deck strength analyzed.	50	10	0.7 0.1	Fed--U.S. Coast Guard
DWT 25	Technologi- cal Guid- ance	COBT Full-Scale Trials, Springing	Springing Phenomena	Instrumentation in- stalled on ore carrier and shakedown trials performed.	90	35	1.1 0.5	Fed--U.S. Coast Guard
NADC 34	Technologi- cal Guid- ance	AIREYE Sensor System for MRS Aircraft (Medium- Range Surveillance)	Avionic Systems Search and Rescue	Modification/integra- tion support complete. Development of active gated TV sensor continues.	955	420	3.6 1.6	Fed--Dept. Trans., U.S. Coast Guard
NHRC 51	Technologi- cal Guid- ance	Workshop on Organizational Survey Methods Climate for Persons Work- ing in Human Resource Management	Survey Methods and Instruments	Additional workshops scheduled.	0	0	0.0 0.0	NP--Victoria Be- havioral Research Assn, LTD
NAVSEA 105	Technologi- cal Guid- ance	Metal Matrix Materials, e.g., Graphite Alum.	Metallurgy	Graphite alum compos- ites have been pro- duced; transfer of technology to recrea- tion industry.	1300	2000	16.0 25.0	Fed--NAVSEASYSOOM
NAVSEA 106	Technologi- cal Guid- ance	Isotropic Graphite Program--Fine-Grained, Nonporous Test Billets	Materials	Billets for T&E to civilian sector on request.	600	--	8.0 --	Fed--NAVSEASYSOOM
NAVSEA 107	Technologi- cal Guid- ance	Boron Nitride Fiber Development, Temp.- Resist. Electric Nonconducting Window Material	Materials	Continuous boron nitride fibers pro- duced on lab scale. Scale-up under way.	330	250	4.0 3.0	Fed--NAVSEASYSOOM
NTSC 124	Technologi- cal Guid- ance	NTSC/Industry Conference; Mil, C.S., Indus Acad. and Foreign; First Conf in 66	Training Methodology	Interservice conference continuing. Proceed- ings published (NAVTRAEQUICEN IH-306).	--	--	-- --	Fed--NTSC
NUSC 126	Technologi- cal Guid- ance	Technological Information Source--Assigned as Staff Scientist	Computer Technology, Info Retrieval	Assisted in prepara- tion of legislation, issued technical re- ports, developed software.	--	--	-- --	State--Connecticut General Assembly

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NUSC 127	Technological Guidance	Community Technology Initiatives Program--Circuit-Riding Technology Experts Small-City Needs	Communications, Management Methods	In past year over 100 problems solved on variety of needs.	33	--	--	NP--CTIP
NUSC 128	Technological Guidance	Technological Utilization Assistance Program to Help Identify and Solve Municipal Problems	Communication, Instrumentation, Management, etc.	Brings resources from industry, federal, and university research to solve municipal problems. Throughout Connecticut, 107 cities and towns of all sizes have been provided service in 250 individual cages, in 2 years.	--	--	--	State--Connecticut Conference of Municipalities
NUSC 130	Technological Guidance	CTIP--32 Cities and Counties Under 50,000 in Population	Computer Technology, Circuit Rider Technology Agent	Gathering and disseminating scientific and technological information to local governments. Responds to specific problems from local govts.	--	--	--	NP--NUSC New England Innovation Group, and Public Technology, Inc.
NUSC 131	Technological Guidance	Technical Volunteer Service; to Solve Problems of Local Governments; 200 Participants; First Project Nationwide	Varied, Electronic, Computer Medical, Engineering, etc.	100 separate projects accomplished--acoustics, all emergency, water quality, inventory control, toxicology, heart pacemakers, etc.	--	--	--	State--NUSC (federal, state, local)
NPRC 168	Technological Guidance	San Diego Technology Action Center (SANDTAC) Action-Oriented Utilization Program--IPA	Support of Local Govt.	Cost saving of \$200K per year. Strong and fully responsive city-wide technical support.	60	60	2.0 2.0	State--City and County of San Diego, Natl. Sci. Found., Fed. Lab. Consortium
NPRC 170	Technological Guidance	Local Government Assistance Task Force	Local Government San Diego	New needs caused by Proposition 13. Couple local needs with laboratory expertise.	--	--	--	Fed--Fed. Lab. Consortium
NOSC 179	Technological Guidance	Technical Coordinator for Federal Laboratory Consortium Assigned to the FWIG (IPA)	Technological Guidance	Assigned to Pacific Northwest Innovations Group.	15	15	1.0 0.0	NP--Pacific Northwest Innovation Group (funded by NSF)

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor	
					FY79	FY80	FY79		FY80
NOSC 200	Technologi- cal Guid- ance	Local Government Assis- tance Task Force	General Assistance	Many issues defined. Stress disability retirement and energy link major problems for detailed pursuit.	3	0	0.1	0.0	State--City and County of San Diego
NRL 221	Technologi- cal Guid- ance	Laser Welding	Materials Research	Extend capability of laser welding to more complex weldments variety of materials.	0	0	0.0	0.0	Fed--NAVSEASYSOOM

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
CEL 03	Transportation	Shrinkage Compensating Cement for Airport Pavements	Ceramics, Refractories	Research complete and research slab recommended. Other data being analyzed.	74	27	0.4 0.1	Fed--FFA
CEL 05	Transportation	Survey on Traffic Markings for Runways, Taxiways, and Parking Aprons	Civil Engineering Paints, Pavements	State-of-the-art survey report complete and sent to printing.	17	8	0.3 0.1	Fed--Dept. Trans.
CEL 06	Transportation	Evaluation of Lime-Treated Native Soils for Base Courses at Airports	Civil Engineering	Samples from Chino, CA; Big Bear, CA; and Payson, AZ airports indicated satisfactory. Criteria for these kinds of soils developed.	34	0	0.3 0.0	Fed--FFA
DWT 07	Transportation	X-Wing Stopped-Rotor Aircraft	Analysis and Testing, Aerodynamics	Hybrid rotor/wing system flight-tested. Potential high for short-haul transports, etc.	3100	18400	10.0 10.0	Fed--Def. Adv. Res. Proj. Agency
JCM 33	Transportation	Small Turbofan Engine for Hi-Perform. Business Jet	Aeronautics	Version of Tomahawk sustainer engine will enter civilian market.	--	--	-- --	Fed--U.S. Air Force
JCM 175	Transportation	Terrain Contour Matching (TERCOM) System for Navigation Update	Inertial Navigation	All 3 variants of the land-attack cruise missile use TERCOM.	--	--	-- --	Fed--Joint Cruise Missiles Project Off.
NAVAIR 40	Transportation	Head-Up Display to Simulate Aircraft	Instrumentation Design	Approach and landing phase potential to commercial.	360	60	7.0 1.0	Fed--NAVAIRSYSCOM
NAVSEA 104	Transportation	Carbon-Carbon Composites for Navy Missile Applic.	Metallurgy	Process for fabricating carbon-carbon composites in orthogonal configurations essentially complete.	700	150	8.0 2.0	Fed--NAVSEASYSYSCOM
NSWC 113	Transportation	DOT-STAR System for Train Accident Reduction	Sensors; Materials	Thermal sensors and rail-contact sensors being evaluated.	250	120	2.0 2.0	Fed--DOT Fed. RR Admin.
NSWC 116	Transportation	Hazardous Material Packaging, Develop Performance Standards	Container and Packaging	Test requirements for drums and pails developed.	6	12	0.2 0.4	Fed--DOT Off. Hazardous Material
NSWC 118	Transportation	Structural Separation System Explosive-Actuated, for Space Shuttle	Explosives Technology	Explosive cartridge designed, developed and delivered to NASA.	9	5	0.1 0.1	Fed--NASA Lyndon B. Johnson Space Center

Performing Activity	Technological Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NSWC 121	Transportation	Space Shuttle Destruct System; Destruct Linear Shaped Charges	Explosives Technology	Assessing effectiveness of charges under re-entry thermal conditions.	32	35	0.5	0.5	Fed--NASA George C. Marshall Space Flight Center
NSWC 183	Transportation	Navigation Signal Monitor (Provide Aircraft Advisory Information of OMEGA and VLF Disturb.)	Navigation Passive Sensors	Design, acquisition of components and brass boarding for extension of VLF communications signals.	84	75	0.1	0.5	Fed--Dept. Trans.
NSWC 191	Transportation	OMEGA Propagation	Navigation EM Wave Propagation	Consultation and propagation prediction; evaluated potential improvements to OMEGA.	625	565	4.5	4.5	Fed--U.S. Coast Guard
NSWC 192	Transportation	Sea Hunt Equipment	Rescue Survival	Test and use trained pigeons to aid aerial searches over water in helicopters.	73	85	1.0	1.1	Fed--U.S. Coast Guard
NRL 213	Transportation	High-Performance Composites and Adhesives for V/STOL Aircraft	Aerospace Materials Develop.	Predict resistance of composites and bonded points to flaw propagation.	260	0	--	--	Fed--NAVAIRSYSCOM
ONR 251	Transportation	Propagation of Acoustic Energy in the Arctic	Computer Technology	Computer program will compute propagation loss as a function of range and depth as well as pulse shapes. Will accommodate rough boundaries between fluid interfaces.	150	208	3.0	4.0	Fed--Off. Nav. Res.

SECTION 4

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PROJECTS PERFORMED BY THE CIVIL ENGINEERING LABORATORY, PORT HUENEME, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	FY80
CEL 01	Energy	Organic Rankine Bottoming System for Diesels to De- crease Fuel Consumption	Air Conditioning, Heating, Light- ing Ventilation	No adverse effect on en- vironment found; Navy- DOE agreement made.	616	120	0.9	1.0
CEL 02	Health and Medicine	Brain Model for Study of Response/Injury Relation- ship	Bioengineering, Solid Mechanics	Small primates being studied; injuries com- puter program written.	138	83	1.2	0.8
CEL 04	Marine Technology	Antifouling Marine Con- crete to Line Ducts and for Floating Structure	Ocean Materials Science, En- vironment	Test cylinders exposed in fouling environment. Monthly evaluation continues.	50	0	0.4	0.0
CEL 03	Transpor- tation	Shrinkage Compensating Cement for Airport Pavements	Ceramics, Refractories	Research complete and research slab recom- mended. Other data being analyzed.	74	27	0.4	0.1
CEL 05	Transpor- tation	Survey on Traffic Markings for Runways, Taxiways, and Parking Aprons	Civil Engineering Paints, Pavements	State-of-the-art survey report complete and sent to printing.	17	8	0.3	0.1
CEL 06	Transpor- tation	Evaluation of Lime- Treated Native Soils for Base Courses at Airports	Civil Engineering	Samples from Chino, CA; Big Bear, CA; and Payson, AZ airports indicated satisfactory. Criteria for these kinds of soils de- veloped.	34	0	0.3	0.0

PROJECTS PERFORMED BY THE DAVID W. TAYLOR NAVAL SHIP R&D CENTER, BETHESDA, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
DWT 14	Analysis and Testing	Effect of Radial Load Distribution on Propeller Cavitation Erosion	Hydrodynamics	Cavitation erosion tests complete.	10	0	0.1 0.0	NP--Soc. Nav. Arch. and Engrs.
DWT 15	Analysis and Testing	Evaluation of Effectiveness of Protective Coatings for Propellers	Hydrodynamics, Propeller Coating	Procedures are being developed. Samples have been tested.	41	0	0.4 0.0	Fed--Maritime Admin.
DWT 18	Analysis and Testing	Stress Relaxation Characteristics of Elastomeric Isolation Mounts	Maintenance Reduction, Machinery Silencing	Apparatus to monitor stress de- signed. Isolation mounts received.	100	100	0.5 0.5	Fed--Fed Railroad Admin.
DWT 19	Analysis and Testing	Energy Conservation Study on Tandem Propellers	Propeller Design, Performance Testing	Experiments made to evaluate tandem design. Report on propulsion tests.	45	--	0.6 --	Fed--Maritime Admin.
DWT 22	Analysis and Testing	Full-Scale Stress Mea- surements on Control- lable Pitch Propeller	Propeller Loads and Stresses, Spindle Torque	Full-scale trials conducted in ice and open water. Some findings reported.	603	200	6.0 2.3	Fed--U.S. Coast Guard
DWT 26	Analysis and Testing	Avondale Shipyard Powering Trials, Provide Torsion- meter and Assist in In- stallation	Instrumentation of Trial	Report published. DTNSRDC 79/094	4	95	0.1 0.9	Ind--Avondale Shipyards, Inc.
DWT 27	Analysis and Testing	Tanker Berthing Evaluation	Instrumentation of Trial	Trials conducted to gather tug/ship interaction forces; report issued.	--	--	-- --	Fed--Dept. Commerce
DWT 28	Analysis and Testing	Shallow Water Maneuvering Trials	Instrumentation of Trial	Trials run; parameters measured; report pub- lished.	20	--	0.2 --	Fed--Maritime Admin.
DWT 29	Analysis and Testing	RMS ADDIRIYAH (MSC-412) Standardization, Tacti- cal, and Fuel Economy Trials	Instrumentation of Trial	Trials concluded and report published.	4	95	0.1 0.9	Fed--NAVSEASYSOON
DWT 30	Analysis and Testing	KATHAI Bay (WTGB-101) Speed, Tactical, and Maneuvering Trials	Instrumentation of Trial	Tactical, maneuvering, speed-vs-shaft-RPM, and ice-breaking trails conducted.	64	227	0.8 2.7	Fed--U.S. Coast Guard

PROJECTS PERFORMED BY THE DAVID W. TAYLOR NAVAL SHIP R&D CENTER, BETHESDA, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Sponsor
					FY79	FY80	Man-Years FY79 FY80	
DWT 08	Computer Technology	Computer-Aided Ship Design and Construction	Computer-Aided Ship Design	Development and dis- semination of computer programs; available for Navy work.	400	700	2.0 4.0	Fed--NAVSEASYS/COM
DWT 20	Energy	MARAD Tandem Propeller Follow-On Program	Hydrodynamics, Tandem Propellers	Design requirements for test propellers being checked.	35	104	0.3 0.7	Fed--Maritime Admin.
DWT 09	Environment	Carbon Fiber Protection	Composite Materials	Methods to minimize entry of fibers into critical systems developed. Conformal coatings being evaluated.	490	400	5.0 4.0	Fed--Rome Air Dev. Cen.
DWT 10	Environment	USCG Marine Sanitation Devices Evaluation	Ship Systems, Maintenance Logistics	Current capabilities and new technology being identified.	32	0	0.4 0.0	Fed--U.S. Coast Guard
DWT 11	Environment	Recovery Device: Oil/ Water Separator (OWS)	Shipboard OWS Systems	Constraint matrix for evaluation complete.	81	65	1.5 0.8	Fed--U.S. Coast Guard
DWT 12	Environment	USCG Oil/Water Separator Detergent	Chemistry, Deter- gent Experience	Emulsion stability tests performed. Out- line for engine room cleaning developed.	80	75	0.5 0.7	Fed--U.S. Coast Guard
DWT 23	Environment	NOAA Current Sensor Experiments for Cable- Body Systems	Hydrodynamics, Environmental Measurements	Current meters calibrated under at- sea conditions.	66	50	0.5 0.4	Fed--National Oceanic and Atmospheric Admin.
DWT 13	Fire and Safety	Inspection Testing-- Lifesaving Equipment	Inspection and Testing	Tests of individual items of lifesaving equipment (life jackets, life rafts, etc.).	60	67	0.8 0.8	Fed--Def. Const. Supply Ctr.
DWT 16	Fire and Safety	Fire Resistance Tests (Hydraulic Fluids for Shipboard)	Inspection	Has only facility (modified compression fire-resistant engine) to test shipboard hydraulic fluids for Navy.	10	27	0.1 0.2	Fed--Def. Gen. Supply Ctr.
DWT 21	Marine Technology	Investigation of Sea- keeping and Maneuvering Characteristics of Various Ships	Hydrodynamics, Rudder Roll Sta- bilization (RRS)	RRS improvements complete. Corrective actions being imple- mented on cutters.	211	248	2.0 2.0	Fed--U.S. Coast Guard

PROJECTS PERFORMED BY THE DAVID W. TAYLOR NAVAL SHIP R&D CENTER, BETHESDA, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	FY80
DWT 31	Marine Technology	Integrated Tug/Barge Concept	Ship Concept Design	OPNAV directed more evaluation of concepts for destroyers and sub. tenders.	--	--	--	--
DWT 17	Technologi- cal Guid- ance	Investigate Bulk Cavitation Effects and Other Hull Loading Mechanisms for Ship Survivability	Bulk Cavitation Hull Loading	Literature review 50% complete.	35	270	0.6	4.0
DWT 24	Technologi- cal Guid- ance	Analysis of Helo Decks for 270- and 210-ft Ships, Strength Analyses	Finite Element Analyses	Finite element model for web bending, de- veloped. Deck strength analyzed.	50	10	0.7	0.1
DWT 25	Technologi- cal Guid- ance	CORT Full-Scale Trials, Springing	Springing Phenomena	Instrumentation in- stalled on ore carrier and shakedown trials performed.	90	35	1.1	0.5
DWT 07	Transpor- tation	X-Wing Stopped-Rotor Aircraft	Analysis and Testing, Aero- dynamics	Hybrid rotor/wing system flight-tested Potential high for short-haul transports, etc.	3100	18400	10.0	10.0

PROJECTS PERFORMED BY GIDEP OPERATIONS CENTER, U.S. NAVAL FLEET ANALYSIS CENTER, CORONA, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years		Sponsor
					FY79	FY80	
FLTAC 32	Analysis and Testing	GIDEP Operations Center	Computer Data Processing and Analysis, Com- munications Networking	\$24 million savings (cost avoidance) in CY 1978 plus intan- gibles.	1700	2000 10.0 11.0	Fed--Joint Logistics Command

PROJECTS PERFORMED BY THE JOINT CRUISE MISSILES PROJECT OFFICE, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
JCMPO 33	Transportation	Small Turbofan Engine for Hi-Perform. Business Jet	Aeronautics	Version of Tomahawk sustainer engine will enter civilian market.	--	--	--	Fed--U.S. Air Force
JCMPO 175	Transportation	Terrain Contour Matching (TERCOM) System for Navigation Update	Inertial Navigation	All 3 variants of the land-attack cruise missile use TERCOM.	--	--	--	Fed--Joint Cruise Missiles Project Off.

PROJECTS PERFORMED BY THE NAVAL AIR DEVELOPMENT CENTER, WARMINSTER, PA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	
NADC 36	Computer Technology	Predictive Codes for En- gine Materials and Costs	Engine Cost Analysis	Modification of com- puter codes continuing.	0	0	0	Fed--NASA Lewis Research Center
NADC 37	Health and Medicine	Efficacy of Symptomatic G-Suit Inflation	Stress Physiology	Human performance measured during centrifuge runs	26	0	2.4	Fed--NASA Johnson Space Center
NADC 35	Instrumen- tation	Retrodirective Array Development/Evaluation for All-Weather Iden- tification	Radar Systems, Sensor Develop- ment	Radar delivered array evaluated, report submitted	350	0	2.0	Fed--Dept. Trans., U.S. Coast Guard
NADC 34	Technologi- cal Guid- ance	AIREYE Sensor System for MRS Aircraft (Medium- Range Surveillance)	Avionic Systems Search and Rescue	Modification/integra- tion support complete. Development of active gated TV sensor continues.	955	420	3.6	Fed--Dept. Trans., U.S. Coast Guard

PROJECTS PERFORMED BY THE NAVAL AIR ENGINEERING CENTER, LAKEHURST, NJ
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NABC 260	Analysis and Testing	Wear Debris Analysis	Wear Analysis	Characterization of wear in oil lubricated systems. Standardi- zation of ferrographs.	--	--	--	Foreign--Great Britain
NABC 261	Analysis and Testing	Infrared Thermography as Inspection Technique	Nondestructive Testing	Quantification of flow type size, and depth detectable in com- posites.	46	47	1.5 1.5	Fed--NAVAIRSYSCOM
NABC 262	Environment	Jet Engine Noise Suppression	Testing jet engines	Development of ex- haust noise suppressor configuration for test cells for out-of-air- frame engines. Air- craft acoustic en- closures.	--	--	--	Fed--NAVMATCOM

PROJECTS PERFORMED BY NAVAL AIR SYSTEMS COMMAND, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NAVAIR 42	Communica- tions	Microstrip Dipole Antennas for Tactical Missile Use	Electronics	Potential application to TV, radio, direction finding, aircraft altimeter, etc.	--	--	-- --	Fed--NAVAIRSYSCOM
NAVAIR 41	Fire and Safety	Swimmer Protective Helmet	Human Factors	May be utilized in underwater construc- tion, rescue, salvage operations.	--	--	-- --	Fed--NAVAIRSYSCOM
NAVAIR 39	General Assistance	Water Displacing Corrosion Prevention Compound	Materials Research and Development	New material for superior to prior corrosion-control com- pounds. Numerous potential applications.	35	35	1.0 1.0	Fed--NAVAIRSYSCOM
NAVAIR 38	Instrumen- tation	Portable Hydrogen Measuring System	Materials Research and Development	Uses barnacle electrode measuring system. PO- tential wherever there is high-strength steel.	30	30	1.0 1.0	Fed--NAVAIRSYSCOM
NAVAIR 40	Transpor- tation	Head-Up Display to Simulate Aircraft	Instrumentation Design	Approach and landing phase potential to commercial.	360	60	7.0 1.0	Fed--NAVAIRSYSCOM

PROJECTS PERFORMED BY THE NAVAL AIR TEST CENTER, PATUXENT RIVER, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years		Sponsor
					FY79	FY80 FY79 FY80	
NAVC 43	Fire and Safety	Head-Up Display to Simu- late Aircraft	---	See NAVAIRSYSOCM	--	-- --	Fed--NAVAIRSYSOCM

PROJECTS PERFORMED BY THE NAVAL BIOSCIENCES LABORATORY, NAVAL SUPPLY CENTER, OAKLAND, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years				Sponsor
					FY79	FY80	FY79	FY80	
NSIOL 44	Environment	Effect of Energy Conser- vation on Air Hygiene	Bacteriology, Ex- pertise in col- lecting bacteria	Semiautomatic samplers for counting airborne bacteria used to evaluate ventilation.	130	0	2.5	0.0	Fed--Dept. Energy
NSIOL 46	Environment	Development of an Oil Identification Kit	Chemistry, Thin- Layer Chromatog- raphy	Finger printing on board ship help to identify source of oil slick.	13	0	0.2	0.0	Fed--Off. Nav. Res.
NSIOL 45	Health and Medicine	Study of Antiherspesvirus Material from Algae	Virology Tissue Culture Expertise	Polyssaccharide active in vitro; a protein with in vivo activity.	30	30	0.8	0.8	Fed--Sea Grant College Program

PROJECTS PERFORMED BY THE NAVAL COASTAL SYSTEMS CENTER, PANAMA CITY, FL
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NCSC 47	Energy	Ocean Thermal Energy Conversion (OTEC) Heat Exchanger Cleaning	Heat Exchanger Technology	Testing and evaluation of in-situ biofouling countermeasures in potential materials continue.	300	152	4.0 2.5	Fed--Dept. Energy
NCSC 49	Environment	Offshore Pollutant Ef- fects Program; Test Facility	Test and Evaluation; Unique Facility	New seawater pumping system being designed EPA performs tests.	95	150	0.5 1.0	Fed--EPA, Environ- mental Research Lab
NCSC 48	Instrumen- tation	Determine Beach Traversa- bility in an Amphibious Operational Area	Electro-Optic Hydrographic Mapping	Aircraft-mounted sensor technique workable in bad weather.	197	240	1.0 1.2	Fed--NAVAIRSYSCOM
NCSC 174	Law En- forcement	Waterborne Intrusion De- tection System--Sensors for Waterborne Intruders	Automatic Electronic Sig- nal Processing	3 sensors under de- velopment: bistatic doppler sonar, target detection, and acoustic interferometer wader.	1220	2150	3.0 7.0	Fed--Physical Security Systems Directorate ESD/ AFSC/USAF

PROJECTS PERFORMED BY THE NAVAL HEALTH RESEARCH CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Naval Technology Applied	Progress	Funding (\$K) FY79	Man-Years FY79	Man-Years FY80	Sponsor
NHRC 50	Health and Medicine	Program for Medical Care of POWs from All Wars	Analysis, Medical Exams, Effects of Captivity	Continued consultation with VA, 5-year follow-up on Vietnam POWs; data collected.	1	1	0.1	Fed--Veterans Admin.
NHRC 52	Health and Medicine	Conference on Navy Occupational Health	Behavior Science, Organizational Dev. Theory	Conference proceedings circulated	25	0	0.3	Fed--Off. Nav. Res. and NNR&D Comm.
NHRC 53	Health and Medicine	Research Findings in Areas of Stress-Related Illnesses	Relationship between Stress and Illness	World literature on effects of life changes, development of illness-- a major research endeavor.	3	3	0.2	Fed--Various
NHRC 54	Health and Medicine	Stress-Related Dis- ability Retirements	Epidemiological Research	Publicity continues and more data forthcoming.	1	1	0.1	NP--Local Govern- ment Assistance Task Force (PLC- Far West Region)
NHRC 55	Health and Medicine	Understanding Sleep Disorders--Education of Professionals	Sleep and Sleep Disorders	Education continuing work shops.	0	0	0.1	State--Univ. Calif. BuMed and Surgery
NHRC 56	Health and Medicine	Education of Public in Sleep, Dreams, and Brain- wave Activity	Laboratory Research	College settings, media.	0	0	0.1	Fed--Various
NHRC 57	Health and Medicine	Education of Physicians on Sleep, Sleep Disorders and Pills	Sleep Disorders, Effect on Per- formance	Consultation to physicians.	0	0	0.1	Fed--Various
NHRC 58	Health and Medicine	Health and Safety of Shift Workers--Interna- tional Meeting Sep 79	Work-Sleep Schedules	Proceedings being compiled, yearly meeting proposed.	40	0	0.1	Ind--Upjohn Inter- national and Navy
NHRC 59	Health and Medicine	Effects of Stress or Simulated Combat on Unit Readiness/Effectiveness	Sleep Deprivation	Background on re- search supplied.	0	0	0.0	Fed--U.S. Army Inst. for the Behavioral and Social Sciences
NHRC 60	Health and Medicine	POWs--Medical Followup Research	Medical and Family Research on POWs	Prolonged Stress Branch continues medical followup.	0	0	0.0	NP--Various POW Organizations
NHRC 61	Health and Medicine	Overview of Current Family Research Efforts in Navy Populations	Health of the Military Family	Overview of findings and methodologies of family research pro- vided.	1	0	0.0	Fed--Various

PROJECTS PERFORMED BY THE NAVAL HEALTH RESEARCH CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NRHC 51	Technologi- cal Guid- ance	Workshop on Organizational Survey Methods Climate for Persons Work- and Instruments ing in Human Resource Management	Additional workshops scheduled.		0	0	0.0 0.0	NP--Victoria Be- havioral Research Assn, LTD

PROJECTS PERFORMED BY THE NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMM., NATIONAL NAVAL MEDICAL CENTER, BETHESDA, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NMR&D 62	Health and Medicine	Design and Test of an Integrated Modular Clini- cal Laboratory for Ship- board Use	Bioengineering, Medical Equipment	Extensive clinical laboratory testing.	58	--	0.9 --	Fed--NMR&D Comm.
NMR&D 63	Health and Medicine	Study of Louse Infesta- tion in Ethiopia	Entomology, Epidemiology	Physical, behavioral, cultural, physiological factors included in publication.	3	--	0.5 --	Fed--NMR&D Comm.
NMR&D 64	Health and Medicine	Recompression Treatment Tables Used Throughout the World by Government and Industry	Hyperbaric Physiology	World-wide recom- pression diving procedures available (DTIC AD A056666).	39	--	0.7 --	Fed--NMR&D Comm. and NAVSEA/SSCOM
NMR&D 65	Health and Medicine	Portable Field Kit for Rapid Disease Diagnosis	Microbiology Medical Instru- mentation	Kit undergoing extensive testing and evaluation.	53	76	0.8 0.9	Fed--NMR&D Comm.
NMR&D 66	Health and Medicine	Navy Amphibious Medical Evacuation Simulation (NAMES II) Computer Model	Clinical Medi- cine, Operations Research	NAMES II expanded from combat zone to CONUS, Applicable to medical emergencies.	75	75	0.6 0.6	Fed--NMR&D Comm.
NMR&D 67	Health and Medicine	Remote Medical Diagnosis System (RMDS) with Slow- Scan TV	Biomedical Engineering, Communications	RMDS for ships and diagnostic centers being spec'd. Video via satellite.	200	800	1.8 2.3	Fed--NMR&D Comm.
NMR&D 68	Health and Medicine	Management of War In- juries to the Jaws and Related Structures Textbook	Clinical Medicine	Publication includes data since 1968, GPO Stock No. 008-045-00018-6.	--	--	-- --	Fed--NMR&D Comm.
NMR&D 69	Health and Medicine	Portable Life Support Stretcher Self-Contained Unit	Biomedical Engineering, Medical Equip- ment	5 units fabricated and under evaluation.	50	40	0.7 0.3	Fed--NMR&D Comm.
NMR&D 70	Health and Medicine	Medical Backpack-- Transport Life Support to Shipboard Casualty	Medical and Hospital Equip- ment, Biomed- ical Engineering	3-month evaluation by ships and research and rescue yielded favorable recommenda- tion.	8	80	0.2 0.4	Fed--NMR&D Comm.

PROJECTS PERFORMED BY THE NAVAL MINE ENGINEERING FACILITY, YORKTOWN, VA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NMEF 71	Analysis and Testing	Hydrogen Evolution Rates, Dev. of Hydrogen Getter	Equipment Development	Gathers great commer- cial potential for use in seal vessels con- taining batteries.	4	--	0.1 --	Fed--NAVSEASYSOCOM

PROJECTS PERFORMED BY THE NAVAL OCEAN RESEARCH AND DEVELOPMENT ACTIVITY, NSTL STATION, MS
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NORDA 75	Computer Technology	Optical Character Recog- nition, Improve Capa- bility to Process Data	OCR--Computer Hardware/Software	Cognitive handprinted input trained recur- sively analyzer (CHITRA) method of recognizing handwritten characters developed.	283	237	1.0 1.0	Fed--Defense Mapping Agency
NORDA 73	Energy	OTWC Flexible Cold Water Pipe	Hi-Strength Fabrics	Evaluation of candi- date designs for OFEC modular experimental platform.	300	75	2.0 1.0	Fed--Dept. Energy
NORDA 72	Instrumen- tation	Expendable Current Pro- filer, Instrumentation for Measurement of Hori- zontal Currents	XBT Technology Geomagnetic Electro-Kineto- graph	Instrument in produc- tion, sampling tech- niques demonstrated. NAVOCEANO to include in surveys.	180	100	1.5 1.5	Fed--NORDA
NORDA 74	Instrumen- tation	Thermistor Array Develop- ment, Moored, Long-Term At-Sea Operation	Kevlar Cable, Semiconductor Sensors	Design complete, array fabricated.	70	--	0.7 --	Fed--NOAA Data Buoy Office
NORDA 76	Instrumen- tation	Remote Ocean Subsurface Temperature Profiler	Laser, Remote Sensing	Optical and electronic, components fabricated, testing begun.	12	21	0.2 0.3	Fed--Nav. Res. Lab.
NORDA 77	Instrumen- tation	Towed Ocean Density System, Towed Sensor Array	Kevlar Cable, Semiconductor Sensors	Design complete, fabrication begun.	185	170	2.5 2.7	Fed--NORDA
NORDA 79	Instrumen- tation	Easily Deployable Sub- surface-Tethered Vehicle That Can Sample the Water Column	Variable Buoy- ancy, Satellite Transmission	Construction complete, prelim- inary tests made.	250	--	2.0 --	Fed--NORDA
NORDA 80	Instrumen- tation	Versatile Experimental Kevlar Array--for Deployment in Ocean	Navy Cable Development Technology	Development of versatile experimental KEVLAR array (VEKA) program.	308	520	5.0 3.7	Fed--NORDA
NORDA 78	Marine Technology	Fiber-Optics Applica- tions to Specific Ocean Measurement Projects	Oceanographic Instrumentation	Technology summary in progress.	60	80	0.8 0.6	Fed--NORDA

PROJECTS PERFORMED BY THE NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	
NOSC 177	Analysis and Testing	Calibration and Evaluation Services (Work in Support of DOD Contracts)	Evaluation	Services performed on individual basis.	22	24	0.5	Industry
NOSC 188	Analysis and Testing	Analysis of U.S. Coast Guard Systems, Coastal Surveillance	Operations Research	10-year operational systems plan, catalog of required task capa- bilities for each platform class, and trade-offs developed.	310	100	3.0	1.0 Fed--U.S. Coast Guard
NOSC 194	Analysis and Testing	USCG Evaluation of SSP (Swath-Type) Kaimalino	Marine Engineering	Sea trials completed.	58	0	0.3	0.0 Fed--U.S. Coast Guard
NOSC 199	Analysis and Testing	Methods for Trace Metals in Seawater by Flameless Atomic Absorption Spectro- photometry	Inorganic Chemistry	60 seawater samples analyzed for copper and zinc.	10	0	0.2	0.0 NP--APL/JHU
NOSC 176	Communica- tions	Polar Communication Pre- diction System	Electromagnetic Environment Prediction	System using solar/ cosospheric distur- bance techniques demonstrated to FAA.	50	0	0.5	0.0 Fed--Dept. Trans., FAA
NOSC 187	Computer Technology	Impact of a Formal Computer-Based Informa- tion System on Informal Info Networks	Information Transfer, Man- Machine Rela- tions	Groups of people, and computer-based systems, selected. Analyses under way.	70	0	0.6	0.0 Fed--National Science Found.
NOSC 189	Computer Technology	Small Boat Simulator, Training Operations	Display Devices and Equipment	Trailer delivered, consoles installed. Radar simulator, flying spot scanner, software nearly complete.	352	111	3.9	1.0 Fed--U.S. Coast Guard
NOSC 196	Computer Technology	Image Acquisition and Processing (for Automated Mail Handling)	Optics, Com- puter Science	Image capture and analysis system operating. Full- page images at 10 pages/sec acquired.	832	500	7.8	4.0 Fed--U.S. Postal Service
NOSC 182	Environment	Environmental Response and Effects (Following Accidental Marine De- position of Radioactive Material)	Radiation Shielding	Samples being analyzed.	50	50	0.3	0.3 Fed--Dept. Energy Safety/Isotope- Fuel Branch

PROJECTS PERFORMED BY THE NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)			Sponsor
					FY79	FY80	Man-Years FY79 FY80	
NOSC 190	Environment	Merchant Marine Occu- pational Noise	Acoustics, Human Factors	Background info on noise on U.S. merchant ships. Noise standards recommended.	56	120	0.8 1.3	Fed--U.S. Coast Guard
NOSC 185	Fire and Safety	Kerosene Jet Breakup Study (Fire Suppression Following Crashes)	Fuels, Drag Reduction Additives	8 additives tested. General correlation of spray inhibition with drag reduction measurements shown.	15	0	0.2 0.0	Fed--NASA Ames Research Center
NOSC 193	Health and Medicine	Crew Performance Assess- ment (Effect of Ship Motion)	Information Theory, Psychology	3 studies under way. 3 classes of ships under operating conditions.	86	0	1.1 0.0	Fed--U.S. Coast Guard
NOSC 197	Health and Medicine	Human Factors Technology Transfer--Mobility for Paraplegics	Bioengineering Prothetics	Wheelchair ambulator completed. Wheel- chair to integrate fabricated. Whole system being tested.	106	14	1.2 0.1	Fed--Veterans Admin.
NOSC 180	Law En- forcement	E/O Character Recognition Study. Using Video Sig- nals from Laser-Scanner TV System, Identify Alphanumeric Auto License Plates	Optical Detection	System of state-of- the art components analyzed. A 5% error rate cannot be met with current sensor.	12	0	0.2 --	Fed--Dept. of Justice Immigra- tion and Naturali- zation Serv.
NOSC 181	Marine Technology	Bowhead Whale Acoustics (Are Whales Present in the Beaufort Sea)	Marine Biology	6 aerial surveys yielded sonobuoy tape recordings of a number of Bowhead Whales.	95	0	0.3 0.0	Fed--U.S. Dept. Interior Bureau of Land Mgmt.
NOSC 178	Marine Technology	Scripps Exchange (Pro- vide a Chief Scientist for the Deep Sea Drill- ing Project)	Deep Ocean Technology	Chief now active at Scripps Institute of Oceanography.	51	0	1.0 0.0	State--Univ. Calif.
NOSC 184	Marine Technology	Solid Rocket Booster (SRB) Dewatering Contingency Equipment (Space Shuttle Program)	Deep Ocean Technology	Two dewatering sets manufactured and acceptance tests witnessed.	116	0	1.6 0.0	Fed--NASA Kennedy Space Ctr.
NOSC 186	Marine Technology	Bowhead Whale Survey Arctic Alaska	Acoustic Detection	Determining number of whales. Project complete.	12	0	0.2 0.0	Fed--National Marine Fisheries

PROJECTS PERFORMED BY THE NAVAL OCEAN SYSTEMS CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) FY79	Man-Years FY79	Man-Years FY80	Sponsor
NOSC 195	Marine Technology	Unmanned Free-Swimming Inspection Vehicle Technology	Ocean Engineering	Univ. of New Hampshire and NOSC vehicle platforms have undergone feasibility tests in water.	282	329	2.2	Fed--Dept. of In- terior U.S. Geologi- cal Survey
NOSC 198	Marine Technology	Acoustic Projector Installation	Underwater Acoustics	Project complete, Underwater projector installation.	12	0	0.2	0.0 NP--Institute for Acoustic Research
NOSC 179	Technologi- cal Guid- ance	Technical Coordinator for Federal Laboratory Consortium Assigned to the PNIG (IPA)	Technological Guidance	Assigned to Pacific Northwest Innovations Group.	15	15	1.0	0.0 NP--Pacific North- west Innovations Group (funded by NSF)
NOSC 200	Technologi- cal Guid- ance	Local Government Assis- tance Task Force	General Assistance	Many issues defined. Stress disability retirement and energy link major problems for detailed pursuit.	3	0	0.1	0.0 State--City and County of San Diego
NOSC 183	Transpor- tation	Navigation Signal Monitor (Provide Aircraft Advisory Information of OMEGA and VLF Disturb.)	Navigation	Design, acquisition of components and brass boarding for extension of VLF communications sig- nals.	84	75	0.1	0.5 Fed--Dept. Trans.
NOSC 191	Transpor- tation	OMEGA Propagation	Navigation EM Wave Propagation	Consultation and propagation pre- diction; evaluated potential improve- ments to OMEGA.	625	565	4.5	4.5 Fed--U.S. Coast Guard
NOSC 192	Transpor- tation	Sea Hunt Equipment	Rescue Survival	Test and use trained pigeons to aid aerial searches over water in helicopters.	73	85	1.0	1.1 Fed--U.S. Coast Guard

PROJECTS PERFORMED BY THE NAVAL OCEANOGRAPHIC OFFICE, NSTL STATION, MS
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years				Sponsor
					FY79	FY80	FY79	FY80	
NOC 81	Communica- tions	Foreign Officer Training Program in Hydrographic Surveying/Coastal Oceanog- raphy	Marine Technology Hydrography	In FY 79, 19 officers from 6 countries trained.	--	--	4.0	4.0	Fed--CNO Security Assistance Training Program
NOC 87	Computer Technology	Automated Techniques for Detecting Ocean Thermal Fronts	Imagery Pattern Recognition	Papers released.	32	32	1.0	1.0	Fed--NAVOC
NOC 84	Energy	Magnetic Survey-- Indonesia Straits; To Map Resources	Airborne Magnetic Survey Capability	Data on Sunda Strait and Makassar Strait gathered, processed, and delivered.	--	--	--	--	Foreign--Inter- national Govt.
NOC 88	Energy	OTEC Biofouling Experi- ment in the Gulf of Mexico; to determine harmful effect of marine organisms	Marine Biology	Prediction of macro- fouling organisms and effects over 30-yr. power plant life.	10	5	0.3	0.2	Fed--Dept. Commerce National Data Buoy Office
NOC 92	Environment	Experimental Ocean Frontal Analysis Chart	Oceanographic Analysis	Sea-surface tempera- tures in Western North Atlantic pro- vided weekly.	22	22	1.0	1.0	Fed--NAVOC
NOC 82	Instrumen- tation	Indonesian/US Hydro- graphic Survey Operations	Coastal Hydro- graphic Surveys	2 large areas now being surveyed. Aid to Indonesian economy.	--	--	--	--	Fed--Def. Mapping Agency, NAVOC
NOC 83	Instrumen- tation	Joint US/Republic of Korean Survey Operations Coasts and Harbors	Coastal Hydro- graphic Surveys	75% of both ROK coastlines complete. Surveys continue.	--	--	--	--	Fed--Def. Mapping Agency, NAVOC
NOC 85	Instrumen- tation	Hydrographic Survey Assistance Program for Other Governments	Coastal Hydro- graphic Surveys	1.3K mile completed in Panama OPS.	--	--	--	--	Fed--Def. Mapping Agency, NAVOC
NOC 89	Instrumen- tation	Instrumentation Test Services	Pressure Chamber Design	Testing biological tracking enclosures. Repair underwater measurement system.	2	3	--	--	Fed--NOAA, Dept. Commerce
NOC 90	Instrumen- tation	Instrumentation-- Transducer Performance Study of Bubble Sweepdown	Hydrographic Coastal Survey, Ocean Engineering	Extending transducer below bottom of launch improved data collec- tion.	48	--	0	0.0	Fed--Def. Mapping Agency

PROJECTS PERFORMED BY THE NAVAL OCEANOGRAPHIC OFFICE, NSTL STATION, MS
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79	
NOC 95	Instrumentation	Instrumentation Calibration Services for Meteorological Systems	Precision Measurement	Meteorological wind and direction sensors calibrated.	1	2	0.0	Ind--Production Control Systems Inc.
NOC 96	Instrumentation	Calibration for Secondary Transfer Standards for Pressure Measurements	Precision Measurement	Quick reaction for dead-weight testers.	1	1	0.0	Ind--Avondale Shipyard, New Orleans
NOC 97	Instrumentation	Repair and Calibration Services of General-Purpose Test Equipment	Standards Laboratory	Repaired and calibrated oscilloscopes, signal generators, etc.	0	0	0.0	Ind--Bay Technical Associates Inc.
NOC 98	Instrumentation	Repair and Calibration of Instruments to Monitor Nuclear Reactor Parameters	Standards Laboratory	100 items of general-purpose electronic test equipment processed. Ongoing	5	10	0.0	Ind--Louisiana Power and Light
NOC 99	Instrumentation	Repair and Calibration of Instruments to Monitor Nuclear Reactor Parameters	Standards Laboratory	110 items processed. NRC requirements must be met.	2	10	0.0	Ind--Mississippi Power and Light
NOC 100	Instrumentation	Test and Calibration Services Mechanical Standards	Precision Measurement	Mechanical standards refurbished.	1	3	0.0	Ind--M-R-S Mfg. Co.
NOC 101	Instrumentation	Repair and Calibration of Meteorological Sensors	Precision Measurement	113 sensors calibrated. Used to monitor air quality in all major cities.	8	10	0.0	Ind--NUS Corp.
NOC 102	Instrumentation	Calibration Services on Deep-Sea Reversing Thermometers	Precision Measurement	Deep-sea reversing thermometers calibrated.	0	1	0.0	State--So. Carolina Wildlife and Marine Resources Dept.
NOC 86	Marine Technology	Screening Test of Marine Wood Preservatives (3 Marine Test Sites)	Marine Biology	Panels exposed for 2 years, exposures continuing for barer, fungi resistance tests	0	0	0.0	NP--International Research Group on Wood Preservation
NOC 91	Marine Technology	Calibration Services for Temperature-Measuring Current Meters	Precision Measurement	10 current meters calibrated using unique facility for ocean environment simulation.	0	0	0.0	Fed--U.S. Geological Survey
NOC 93	Marine Technology	Plastic Tereido-Barriers for Marine Piling--Control Marine Borers and Fungi	Marine Biology	No attack at 3 test sites. Program continuing.	0	0	0.1	Ind--Raychem Corp., Houston

PROJECTS PERFORMED BY THE NAVAL OCEANOGRAPHIC OFFICE, NSTL STATION, MS
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NOC 94	Marine Technology	Instrumentation Calibra- tion Services--Det. Salinity of Unknown Samples	Precision Measurement	Samples analyzed.	0	1	0.0 0.0	Ind--Beckman Instru- ments, Inc.

PROJECTS PERFORMED BY THE NAVAL POSTGRADUATE SCHOOL, MONTEREY, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NPS 259	Computer Technology	City Computerized Manage- ment Information System	Computer Applications	Computerized Management information system for city of Santa Fe. Rec- ommended new equipment and software.	--	--	--	State--Santa Fe, NM
NPS 257	Fire and Safety	Nondisintegrable Burn Tower, CTIP Project, IPA assignment	Construction Engineering	Tower to stand up with repeated use construct- ed of porous concrete blocks reinforced with steel rod.	--	--	--	State--Carson City, NV
NPS 254	General Assistance	Utilization of RDT&E Investment at CEL	Research Utilization	Improve utilization of product from CEL. Evaluate current system. Effective technology transfer.	28	0 0.3	--	Fed--NAVFAC
NPS 255	General Assistance	Technology Transfer Symposium on Research Utilization	Research Utilization	Technology transfer effort for the future should be one towards a pull for new technol- ogy.	5	0 0.1	--	Fed-- (NAVJATCOM, NAVFAC, NPS)
NPS 256	General Assistance	Conference for the Forest Service	Research Utilization	To establish a national policy for utilization of Forest Service research results.	--	--	--	Fed-- (U.S. Forest Service)
NPS 258	Health and Medicine	Change in Asphalt Composition	Chemical Engineering, Environmental Health	New technology to eliminate use of carcinogens in asphalt.	--	--	--	State--Carson City, NV

PROJECTS PERFORMED BY THE NAVAL RESEARCH LABORATORY, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NRL 220	Analysis and Testing	Corrosion Resistance of Steel Piling	Materials Research Energy	Helped on design of foundation piling for nuclear power plant.	2	8	0.0	0.0	Fed--Nuclear Regu- latory Comm.
NRL 206	Analysis and Testing	Alloy Fracture Micro- mechanisms	Microstructural Analysis	Analysis on propeller shaft failure on a com- mercial tanker (Coast Guard)	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 216	Analysis and Testing	Surface Analysis of Guid- ance System Components	Surface Analysis Techniques	Effort to identify source of noise in slip ring assemblies. New approaches to organic film identification.	35	60	0.5	0.6	Fed--Strategic Systems Project Office
NRL 218	Analysis and Testing	Alloy Fracture Micro- mechanics (Bridge Wires)	Failure Analysis, Fracture	Determine why wires on Mesana Narrows suspen- sion bridge breaking.	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 219	Analysis and Testing	Alloy Fracture Micro- mechanisms (Helicopter Rotor Spindle)	Failure Analysis	Remedy for Sikorsky H-3 rotor spindle fractures.	164	173	2.1	2.6	Fed--Off. Nav. Res.
NRL 222	Analysis and Testing	Welding Metallurgy	Materials Research	Led conference on laser welding for Amer. Soc. Metals.	188	197	2.7	2.8	Fed--Off. Nav. Res.
NRL 224	Analysis and Testing	Laser Processing of Materials, Improved Corrosion Resistance, Strength	Materials Research, Research Method- ology	Industry exploring NRL's laser-spray pro- cess and laser-melting of plasma-spray coatings.	310	220	3.7	2.6	Fed--Off. Nav. Res./ DARPA
NRL 229	Analysis and Testing	Computer Program for Spec- tra Analysis	Materials Analysis	Computer operation speeded up with addi- tion of fast approxi- mation to complementary error function.	15	0	0.2	0.0	Fed--NAVALRESYSCOM
NRL 207	Communi- cations	Electronic Components for Expendable ECM	Electronic Countermeasures	Characterization of expendable TWTs. Cathode structures elevated. Spectrom- eter membrane design.	440	900	1.3	1.3	Fed--NAVALRESYSCOM
NRL 210	Communi- cations	Acousto-Optics Technology Advancement	Optic Imager/ Detector	Acousto-optic tech- niques for DOA and TOA. Increase in imager dy- namic range, investi- gate crystals.	762	700	2.7	3.3	Fed--NAVALRESYSCOM

PROJECTS PERFORMED BY THE NAVAL RESEARCH LABORATORY, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NRL 225	Communica- tions	Sonar Ceramic Stability Amplifier	Materials Research Sound Transducers	New composite concept to improve sonar sensors. Important operation/logistic advantages.	35	45	0.4 0.4	Fed--Off. Nav. Res.
NRL 230	Communica- tions	Gyrotron Traveling Wave Amplifier	Electronics Development	Design for gyrotron travelling wave ampli- fier operating at sec- ond cyclotron harmonic complete.	0	0	0.0 0.0	Fed--Rome Air Development Ctr.
NRL 231	Communica- tions	High-Power Millimeter- Wave Amplifier	Electronics Development	Computer program for calculating optimum operating parameters for gyrotron travelling wave amplifier.	0	0	0.0 0.0	Fed--Rome Air Development Ctr.
NRL 232	Communica- tions	Millimeter-Wave Power Tube Development	Electronics Development	Exchange info on gyro- tron. Raytheon to evaluate NRL beam collectors and tube processing.	0	0	0.0 0.0	Fed--Nav. Res. Lab.
NRL 233	Communica- tions	Low-Bit-Rate Digital Speech	Signal Pro- cessing	Large-scale integration of speech processors. Psychoacoustic inter- actions.	400	400	5.0 5.0	Fed--NAVELCSYCOM
NRL 234	Communica- tions	Microwave Scattering Patterns	Electronics Radar, Communi- cations	Obtain model of elec- tromagnetic scattering patterns from the ocean. Radar target classification in ocean environments.	84	90	1.6 1.4	Fed--Off. Nav. Res.
NRL 237	Communica- tions	Sonar Transducer Reliability Improvement Program (STRIP)	Materials Research, Sonars, Trans- ducers	Annual review attended by industry, workshops, publications.	495	495	10.0 9.5	Fed--NAVSEASYSYCOM
NRL 208	Computer Technology	Computer/Processors for EW/ESM	Technological Improvements	Determining redundancy allowable in EW anal- ysis and evaluation.	94	110	0.5 0.6	Fed--NAVAIRSYCOM
NRL 209	Computer Technology	Automatic Radar Pattern Recognition	Data Base Management	Enhancement of signal- processing operations in ESM systems.	340	1000	1.5 3.0	Fed--NAVAIRSYCOM

PROJECTS PERFORMED BY THE NAVAL RESEARCH LABORATORY, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years		Sponsor
					FY79	FY80 FY79 FY80	
NRL 205	Energy	National Cladding/Duct Materials Development	Microstructural Analysis, Frac- ture Behavior	Fracture testing of irradiated steel alloys. Phase stability under irradiation determined.	60	75 0.7 0.8	Fed--Dept. Energy
NRL 211	Energy	Monitoring of Nuclear Airborne Materials	Nuclear Chemistry	Very-high-sensitivity carbon-14 detector. Monitoring or release levels associated with fuel processing.	210	270 1.0 1.0	Fed--Dept. Energy
NRL 226	Energy	Fusion Materials Task Groups	Materials Research	Review of DOE Fusion Materials Program. Analysis of ferritic steels for fusion re- actors. Stability of irradiated titaniums.	100	200 1.0 1.5	Fed--Dept. Energy
NRL 228	Energy	International Group on Cyclic Crack Growth Rate	Materials Analysis Fatigue Crack Growth Technology	Study of effects of reactor operating con- ditions. Committee organized, research results distributed.	250	250 3.5 3.0	Fed--Nuclear Regu- latory Commission
NRL 227	Energy	Task Force on Crack Propagation Technology	Materials Research, Crack Propagation	Develop rules for implementation of crack growth method- ology into ASME Boiler & Pressure Vessel Code. Regun with 316 S.S.	0	0 0.0 0.0	NP--Metal Prop- erties Council
NRL 212	Energy	Laser Chemistry. Effects of Laser Excitation on Catalytic Reactions	Materials Research, Chemical Kinetics	Prototype system, decomposition of formic acid on platinum, produces CO and CO ₂ ; studied under laser radiation.	150	150 2.0 2.0	Fed--Off. Nav. Res.
NRL 214	Energy	Hot Corrosion Prevention in Gas Turbines	Materials Research	Low-temp. not corro- sion results from re- action of SO ₃ in engine gas with oxides on blade surface. Chro- mium effective against this.	365	310 3.9 3.7	Fed--NAVSEASYSOON
NRL 215	Energy	Chelant Boiler Treatment, EDTA	Materials Research	Investigating source of copper in chelant- treated boilers. On- site analytical proce- dure being developed.	--	-- -- --	Fed--NAVSEASYSOON

PROJECTS PERFORMED BY THE NAVAL RESEARCH LABORATORY, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NRL 223	Energy	Fabrication of New Superconductors	Materials Research	Contract awarded to demonstrate industrial production of multil- ametary V ₃ Ga wires.	155	150	2.0 2.0	Fed--NAVAIRSYSCOM
NRL 217	Fire and Safety	Workshop--Control of Ship- board Damage	Damage Control	Seek participation of industry in formulating R&D program plan for fire protection and damage control on ships.	--	--	-- --	Fed--NAVSEASYSYSCOM
NRL 235	General Assistance	Circuit-Riding Technology Agent in Community Tech- nology Initiatives Pro- gram (CTIP) (Rockville)	General Assistance	Service in local gov- ernments contributions in sewage disposal, water quality, air pollution, fire suppression, etc.	40	40	1.0 1.0	NP--National Sci. Found. (CTIP)
NRL 201	General Assistance	Electronic Materials Technology	Metallography	Method developed to grow high-purity semi- insulating gallium arsenide single crys- tals, industry eval- uating, using.	--	--	-- --	Fed--NAVATCOM
NRL 203	General Assistance	Ultrapurification of Gaseous Hydrogen Fluoride	Chemical Engineering	Perfected method for removal of water and most carbonaceous contamination. Shared with industry.	0	0	0.0 0.0	Fed--Nav. Res. Lab. and Perkin Elmer
NRL 236	Health and Medicine	Ultrasonic Pressure/ Intensity Levels Accept- able for Human Tissue	Acoustic Impulse Technology	Acoustic impulse from thick PZT plates has been narrowed to give an effective bandwidth of about 15 MHz.	30	10	0.3 0.1	Fed--Food and Drug Admin. Bureau of Radiological Health
NRL 202	Instrumen- tation	Semiconductor Materials, Preparation for Elec- tronics Applications	Metallurgy	Procedure for in-situ etch of III-V com- pound substrates prior to growth by liquid phase epitaxy of III-V layers having elec- tronics applications.	--	--	-- --	Fed--Nav. Res. Lab.
NRL 204	Instrumen- tation	Controlled Porosity Dispenser Cathode Development	Microwave Tube Components	Controlled pore sur- face fabricated using modern microelectronic photolithography.	--	--	-- --	Fed--NAVELCSYSCOM

PROJECTS PERFORMED BY THE NAVAL RESEARCH LABORATORY, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NRL 239	Marine Technology	Ocean Thermal Energy Conversion	Mechanical Engineering	Enhance structural reliability of OTEC cold water pipe by recommending design changes.	--	--	-- --	Fed--National Oceanic and Atmospheric Admin.
NRL 221	Technologi- cal Guid- ance	Laser Welding	Materials Research	Extend capability of laser welding to more complex weldments variety of materials.	0	0	0.0 0.0	Fed--NAVSERASYSOM
NRL 213	Transpor- tation	High-Performance Compos- ites and Adhesives for V/STOL Aircraft	Aerospace Materials Develop.	Predict resistance of composites and bonded points to flaw prop- agation.	260	0	-- --	Fed--NAVAIRSYSOM

PROJECTS PERFORMED BY THE NAVAL SHIP WEAPON SYSTEMS ENGINEERING STATION, PORT HUENEME, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NSWSES 108	Instrumen- tation	Two-Wire Telephone Data System Remote Control System to Start, Stop, Tune Receivers, Recorders	Microprocessor Technology	Building RF assembly for antenna assembly on top a ship's mast.	1	5	0.2 0.2	Fed--NAVSEASYSOON
NSWSES 109	Instrumen- tation	Improved Low-Noise Telemetry Receiver Assembled From Modular PC Assembly	Microprocessor Technology	2 receivers com- pleted and tested, 5 under construction.	25	25	0.5 0.5	Fed--NAVSEASYSOON
NSWSES 110	Instrumen- tation	Dynamic Radio-Frequency Tester, Signal Simulates Missile in Flight	Microprocessor Technology	2 improved dynamic testers under con- struction.	20	20	0.3 0.3	Fed--Navy NATO SEASPARROW

PROJECTS PERFORMED BY THE NAVAL SURFACE WEAPONS CENTER, DAHLGREN, VA SILVER SPRING, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NSWC 115	Analysis and Testing	Position Lifetime Tech- nique--Measuring Moisture in Composites	Composite Materials Nondestr. Testing	Feasibility demon- strated for several polyamide resins.	10	10	0.1 0.1	Fed--NASA Langley Research Ctr.
NSWC 120	Analysis and Testing	Underwater Tank Tests Using Unique Facilities	Hydroballistics	Test services provided for Navy and industry.	70	70	1.0 1.0	Fed. and Ind.
NSWC 111	Computer Technology	Cross-Tie Memory, High- Density, Nonvolatile	Thin-Film Memory	Transferred to indus- try, which is further developing.	300	220	3.2 3.3	Fed--NAVSEASYS COM
NSWC 112	Energy	NITINOL Heat Engines-- Convert Low-Grade Thermal Energy to Useful Mech. or Elec. Energy	Thermodynamics	Prototype engines being evaluated. Specialized NITINOLS commercially available.	75	0	1.0 0.0	Fed--Dept. Energy
NSWC 119	Energy	HNS Explosive Evaluation Hexanitrostilbene	Explosives Synthesis	Evaluating process to synthesize; analyt- ical procedures for assay of purity.	52	65	0.7 0.5	Fed--NASA Lyndon B. Johnson Space Center
NSWC 117	Fire and Safety	Reactor Safety Studies, Hydrodynamic Loads from Accidents	Safety Engineering Hy- drodynamic and Structural Comput.	Services provided as NRC requests, e.g., Three Mile Island, Clinch River	16	5	0.3 0.1	Fed--Nuclear Regulatory Commission
NSWC 114	Law En- forcement	Self-Powered Vehicle Detector, Detects Vehicles on Any Roadway	Magnetic Surveillance Technology	20 system built and now being evaluated. Potential for traffic control.	50	0	1.0 0.0	Fed--DOT Fed. Highway Admin.
NSWC 113	Transpor- tation	DOT-STAR System for Train Accident Reduction	Sensors; Materials	Thermal sensors and rail-contact sensors being evaluated.	250	120	2.0 2.0	Fed--DOT Fed. RR Admin.
NSWC 116	Transpor- tation	Hazardous Material Packaging, Develop Performance Standards	Container and Packaging	Test requirements for drums and pails developed.	6	12	0.2 0.4	Fed--DOT Off. Hazardous Material
NSWC 118	Transpor- tation	Structural Separation System Explosive- Actuated, for Space Shuttle	Explosives Technology	Explosive cartridge designed, developed and delivered to NASA.	9	5	0.1 0.1	Fed--NASA Lyndon B. Johnson Space Center
NSWC 121	Transpor- tation	Space Shuttle Destruct System; Destruct Linear Shaped Charges	Explosives Technology	Assessing effective- ness of charges under re-entry thermal conditions.	32	35	0.5 0.5	Fed--NASA George C. Marshall Space Flight Center

PROJECTS PERFORMED BY THE NAVAL TRAINING EQUIPMENT CENTER, ORLANDO, FL
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NTEC 123	Communica- tions	Extremely Wide Angle Visual Displays	Visual Systems, Visual Simulation	Could have impact on visual system through- out aviation community	200	--	4.0	--	Fed--NAVJATCOM
NTEC 122	Computer Technology	Application of Voice Technology in Automated Systems	Voice Technology	Speech technology to replace keyboard data for flight plan amend- ments.	225	225	4.5	4.5	Fed--NAVJATCOM
NTEC 124	Technologi- cal Guid- ance	NTEC/Industry Conference; Mil, C.S., Indus Acad. and Foreign; First Conf in 66	Training Methodology	Interservice conference continuing. Proceed- ings published (NAVTRAEQUIPCEN IH-306).	--	--	--	--	Fed--NTTC

PROJECTS PERFORMED BY THE NAVAL UNDERWATER SYSTEMS CENTER, NEW LONDON, CT
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NUSC 132	Communica- tions	Improve Information Retrieval Capabilities, New Methods of Communi- cation	Computer Technology	Training on Electronic Information Exchange System (EIES) as nucleus of a national innovation network.	--	--	--	NP--R.I. League of Cities and Towns, New England Innova- tion Group, Fed. Lab. Consortium
NUSC 125	Energy	Technical Energy Specialist (IPA)--- Scientific Consultant for Energy Extension Service	Heating, Engineering	Technical energy briefs in response to specific needs.	--	--	--	NP--NUSC/Univ. Conn.
NUSC 129	Energy	Energy Conservation in Public Buildings More Efficient Lighting, Heating, Education-- All U.S.	Lighting, Heating, Audiovisual Lab.	Prepared Lighting Efficiency Program, Thermal Efficiency Program underway.	--	--	--	Federal
NUSC 126	Technologi- cal Guid- ance	Technological Information Source--Assigned as Staff Scientist	Computer Technology, Info Retrieval	Assisted in prepara- tion of legislation, issued technical re- ports, developed software.	--	--	--	State--Connecticut General Assembly
NUSC 127	Technologi- cal Guid- ance	Community Technology Initiatives Program-- Circuit-Riding Technol- ogy Experts Small-City Needs	Communications, Management Methods	In past year over 100 problems solved on variety of needs.	33	--	--	NP--CTIP
NUSC 128	Technologi- cal Guid- ance	Technological Utiliza- tion Assistance Program to Help Identify and Solve Municipal Problems	Communication, Instrumentation, Management, etc.	Brings resources from industry, federal, and uni- versity research to solve municipal problems. Through- out Connecticut, 107 cities and towns of all sizes have been provided ser- vice in 250 indi- vidual cages, in 2 years.	--	--	--	State--Connecticut Conference of Municipalities

PROJECTS PERFORMED BY THE NAVAL UNDERWATER SYSTEMS CENTER, NEW LONDON, CT
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NUSC 130	Technologi- cal Guid- ance	CTIP--32 Cities and Counties Under 50,000 in Population	Computer Technology, Circuit Rider Technology Agent	Gathering and dis- seminating scientifi- c and technological information to local governments. Re- sponds to specific problems from local govts.	--	--	--	NP--NUSC New England Innovation Group, and Public Technol- ogy, Inc.
NUSC 131	Technologi- cal Guid- ance	Technical Volunteer Ser- vice; to Solve Problems of Local Governments; 200 Participants; First Project Nationwide	Varied, Elec- tronic, Computer Medical, Engi- neering, etc.	100 separate projects accomplished-- acoustics, all emer- gency, water quality, inventory control, taxiology, heart pacemakers, etc.	--	--	--	State--NUSC (fed, state, local)

PROJECTS PERFORMED BY THE NAVAL WEAPONS CENTER, CHINA LAKE, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
NWC 135	Analysis and Testing	Fire/Ballistic Tests of Composites; Fibers Re- leased From Graphite- Epoxy Composites	Aeronautics	Prepared test site and collection tunnel.	35	30	0.3	0.3	Fed--NASA Ames Research Center
NWC 136	Analysis and Testing	Drop Tank Test--Part of Navy Acceptance	Aeronautics	Fuel fire and fuel vapor ignition tests.	33	0	0.1	0.0	Ind--Royal Indus- tries, Inc.
NWC 138	Analysis and Testing	To Quantify Hazards with Large Spills of LNG and LPG, Spill Facility Completed	Atmospheric Physics, Safety and Chemical Engineering	Burning behavior, detonation tests, vapor dispersion, concentration.	141	100	1.0	0.8	Fed--Dept. Trans.
NWC 139	Analysis and Testing	Ammonia Spill Tests; Extent of Hazard	Atmospheric Physics, Safety and Chemical Engineering	Nondispersive spectrophotometer evaluated for de- termining ammonia concentration. New data acquisi- tion system being specified.	225	417	1.3	1.7	Fed--Dept. Trans.
NWC 140	Analysis and Testing	Spill Tests--LNG and LPG; Design Facility	Atmospheric Physics, Safety and Chemical Engineering	Contractor bidding on 40-cum facility. Vapor concentration studies.	787	378	2.1	2.5	Fed--Dept. Energy
NWC 141	Analysis and Testing	Maverick Booster Testing for Explosive Technology Inc.	Explosives/ Propellants	Test boosters at impact shock levels predicted for war- head.	14	0	0.1	0.0	Ind--Explosive Technology Inc.
NWC 143	Analysis and Testing	Physics of Crystalline Surfaces to Produce Better Thin-Film Devices	Solid-State Physics	Mechanism of formation of epitaxial films and nature of "clean" crystal surfaces. Publications.	15	16	0.2	0.2	Fed--NASA Ames Research Center
NWC 144	Analysis and Testing	Optical Evaluation of Typical FLIR Spherical Mirror; To Measure Scattering	Optics	Mirror polished, coated, and measured. Continuing.	0	0	0.0	0.0	Ind--Hughes Aircraft
NWC 145	Analysis and Testing	Mirror Surface Char- acterization for Large Optics	Optics	Surface quality evaluation in pro- cessing of ad- vanced optical materials.	11	0	0.2	0.0	Ind--General Dynamics Convair

PROJECTS PERFORMED BY THE NAVAL WEAPONS CENTER, CHINA LAKE, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NWC 146	Analysis and Testing	Intrinsic Damage Thres- hold Study--Study Laser Damage Phenomena	Optics	Goal--Multilayer coatings with in- creased damage resistance. Sig- nificant progress in film produc- tion, etc.	130	130	1.0 1.0	Fed--Dept. Energy
NWC 147	Analysis and Testing	Preparation and Char- acterization of Amorphous Silicon--More Efficient Solar Cells	Optics	Develop techniques useful in manufac- ture.	59	141	0.6 1.6	Fed--Dept. Energy Solar Energy Research Inst.
NWC 151	Analysis and Testing	Synthesis Studies-- Employ New Oxidant Peroxydisulfuric Acid in Synthesis of New Compounds	Organic Chemistry	1,2,3,5-Tetranitro- benzene and Pentanitro- benzene synthesized.	70	0	1.0 0.0	Fed--Dept. Energy Lawrence Livermore Lab.
NWC 152	Analysis and Testing	Surveillance; ROCOZ Optical Components-- For Rocket-Borne Ozonesonde ROCOZ	Atmospheric Physics	Spectrophotometric calibrations and requisite calcula- tions of effective ozone absorption coefficients. Aging characteristics of interference filters.	37	50	0.5 0.6	Fed--NASA Goddard Space Flight Ctr.
NWC 153	Analysis and Testing	Develop New Procedure to Synthesize TATB	Organic Chemistry	1,3,5-Triamino-2,4,5- Trinitrobenzene.	100	100	1.4 1.4	Fed--Dept. Energy Los Alamos Scien. Lab.
NWC 154	Analysis and Testing	Establish Combustion Instability Characteris- tics for Space Shuttle Solid Rocket Motor	Propellants	Combustion stability of igniter propellants. Thrust perturbations of booster motor.	37	38	0.3 0.3	Fed--NASA
NWC 156	Analysis and Testing	CADM Submunitions Program To Perforate 8-Inch Triple-Reinforced Concrete	Explosives and Aeronautics	Perforation measure- ments. Ability of submunition fins to stabilize.	58	0	0.1 0.0	Ind--Aerojet Ord- nance and Mfg. Co.
NWC 157	Analysis and Testing	Vought Free-Flight Rocket Track Test--Dispersion of Subpacks, Munitions Released in Free-Flight	Explosives and Aeronautics	High-speed track test conducted.	111	0	0.1 0.0	Ind--Vought Heli- copter Inc.
NWC 158	Analysis and Testing	Firestone F-18 Fuel Tank Test--Structural Infor- mation on Takeoff and Landing	Aeronautics	Good results from 6 data runs.	72	0	0.1 0.0	Ind--Firestone Coated Fabrics Co. Inc.

PROJECTS PERFORMED BY THE NAVAL WEAPONS CENTER, CHINA LAKE, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor	
					FY79	FY80	FY79		FY80
NWC 159	Analysis and Testing	Martin-Marietta Submissile Explosives and Dispersion Test; Dynamic Track Test		Dynamic track test for submissile disper- sion and flight characteristics.	60	0	0.2	0.0	Ind--Martin-Marietta Aerospace
NWC 160	Analysis and Testing	Assault Breaker, Verify Aerodynamics of Sub- munitions	Aerodynamics	Cost estimate and test plan prepared.	20	0	0.0	0.0	Ind--Hughes Aircraft
NWC 162	Analysis and Testing	NASA Galileo Probe; Verify Structural Integ- rity, etc., of Parachutes	Aeronautics	High-speed drop test vehicles being modi- fied. Test instru- mentation being designed or procured.	123	0	1.5	0.0	Fed--NASA Ames Research Center
NWC 163	Analysis and Testing	Automatic Deployed Survival Kit	Escape Systems	Will be demonstrated for installation into T-2 aircraft on Japanese Air Self- Defense Force.	13	0	0.0	0.0	Ind--American Safety Flight System
NWC 133	Energy	Conversion of Solid Waste to Polymer Gasoline	Chemical Engineering	Pyrolysis gas puri- fication subsystems greatly improved, some gasoline pro- duced from organics derived from trash.	46	0	0.4	0.0	Fed--EPA Environ- mental Research Center
NWC 134	Energy	COSO Geothermal--Support Joint USM--DOE Drilling Program, Geothermal Reservoir Parameters	Geology and Mineralogy	Testing under way to determine param- eters, were productiv- ity.	27	0	0.1	0.0	Fed--Dept. Energy Nevada Oper. Off.
NWC 137	Energy	Research into Pyrolysis of Pure Cellulose and Pure Lignin Powder; Toward Making Petrochem.	Chemical Engineering	Use China Lake entrained flow pyrolysis reactor	25	0	0.2	0.0	Fed--Dept. Energy Solar Energy Re- search Institute
NWC 148	Environment	Silver Iodide Pyrotechnic Flares--Interaction of Nucleants With the Atmosphere	Inorganic Chemistry	Accumulation of pyrotechnic formula- tions can be reworked into use in opera- tional programs.	0	0	0.0	0.0	State--Santa Barbara County
NWC 149	Environment	Inadvertent Weather Modification from Shuttle Launches	Atmospheric Physics	Characterize alum- inum oxide aerosols. Stabilized ground clouds from Kennedy Space Center mea- sured.	55	0	0.2	0.0	Fed--NASA

PROJECTS PERFORMED BY THE NAVAL WEAPONS CENTER, CHINA LAKE, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NWC 150	Environment	Western Kansas Ground Water Study--Provide Consulting Services	Atmospheric Physics	Advise on pyrotechnic capability.	18	0	0.2 0.0	State--Western Kansas Ground Water Dist. #1
NWC 161	Environment	Technical Support in In- stallation of Airborne Research Data System and Other Research Systems	Atmospheric Physics	Provided support to APL as requested.	15	0	0.0 0.0	NP--Johns Hopkins Univ.
NWC 142	General Assistance	Operation of the Federal Laboratory Consortium for Technology Transfer	Technology Transfer	Spring meeting held, Fall meeting planned. Workshops, seminars, newsletter.	182	220	0.5 0.5	Fed--National Science Found.
NWC 164	General Assistance	Federal Laboratory Consortium for Technol- ogy Transfer--Santa Fe, Oct 78 and NBS May 79	Technology Transfer	Semiannual meetings, executive committee meetings.	0	0	0.0 0.0	Fed--Independent Research and Devel- opment/Technology Utilization (IRED/TU) Office
NWC 165	General Assistance	Technology Transfer Exhibit Energy Fair, State and Local Government	Technology Transfer	Pairs in LA, Hartford, supply state and local with info on NWC.	0	0	0.0 0.0	Fed--IRED/TU Office
NWC 155	Health and Medicine	Automatic Tissue Culture Colony Counter	Optics	Improved second version of cell colony monitor. Consists of optics mechanical reticle and sample drive, electronics.	14	0	0.2 0.0	Fed--Dept. Health Education, and Welfare

PROJECTS PERFORMED BY THE NAVAL WEAPONS SUPPORT CENTER, CRANE, IN
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NWSC 167	Communica- tions	Submarine Signal Fuze for launching markers underwater.	Instrumentation	Uses seawater battery, activated in 6-8-ft water.	--	--	--	Fed--NAVSEASYSOCM
NWSC 166	Environment	Method for Disposing of Red Phosphorus Composition from Markers, Signals	Chemical Engineering	Incineration complex combined in the breakdown machines to make pilot plant. Operation proved technical soundness and feasibility environment ac- ceptability.	--	--	--	Fed--NAVSEASYSOCM

PROJECTS PERFORMED BY THE NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER, SAN DIEGO, CA
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
NPRDC 169	Energy	Energy Link; Catalog of Assistance Sources in Fed Consortium	Data Gathering and Analysis	Energy Link Catalog based on needs of cities and counties. Being edited for printing.	--	30	--	1.0 Fed--Fed. Lab. Consortium
NPRDC 168	Technologi- cal Guid- ance	San Diego Technology Action Center (SANDTAC) Action-Oriented Utili- zation Program--IPA	Support of Local Govt.	Cost saving of \$200K per year. Strong and fully responsive city- wide technical support.	60	60	2.0 2.0	State--City and County of San Diego, National Science Found., Fed. Lab. Consortium
NPRDC 170	Technologi- cal Guid- ance	Local Government Assis- tance Task Force	Local Government San Diego	New needs caused by Proposition 13. Couple local needs with laboratory expertise.	--	--	--	Fed--Fed. Lab. Consortium

PROJECTS PERFORMED BY THE OFFICE OF NAVAL RESEARCH, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
ONR 245	Analysis and Testing	Theory of Fault Diagnosis in Linear Systems	Electronic Engineering	Established a measure of testability and an efficient algorithm for solving the fault diagnosis equation.	15	--	0.1 --	Fed--Off. Nav. Res.
ONR 244	Communica- tions	Conducting Polymers Based on Polyacetylene or (CH) _x .	Polymer Chemistry Synthesis of Conducting Poly- mers	Rapid transfer to in- dustry. Promise of economical plastic solar cells--a new option in solving energy crises.	120	120	2.0 2.0	Fed--Off. Nav. Res.
ONR 247	Communica- tions	Ohmic Contacts in Gallium Arsenide	Electronic Engineering Electromagnetics	Published how to improve metallic- ohmic contacts to gallium arsenide devices.	0	0	0.0 0.0	Fed--Off. Nav. Res.
ONR 248	Communica- tions	Gold-Germanium Refractory Contacts	Electronic Engineering	Provided how to improve production yield and perform- ance of gallium arsenide microwave devices.	20	0	0.2 0.0	Fed--Off. Nav. Res.
ONR 246	Computer Technology	Nonlinear Controllability	Theoretical Math	Complete solution to the controllability problem for a large class of nonlinear systems.	24	15	0.2 0.2	Fed--Off. Nav. Res.
ONR 249	Computer Technology	Data Base Machine	Electronic Engineering	New computer organi- zation customized to perform data storage and retrieval. Order- of-magnitude increase in speed, more easily programmed.	60	60	1.1 1.1	Fed--Off. Nav. Res.
ONR 250	Computer Technology	Personalized Graphics Systems for Automated Maintenance	Human Factors Engineering	Computer-edited made- to-order movie to give expert consultation on repair problems. Re- flects viewer's knowl- edge.	120	170	2.0 3.0	Fed--Off. Nav. Res.

PROJECTS PERFORMED BY THE OFFICE OF NAVAL RESEARCH, WASHINGTON, DC
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K) Man-Years			Sponsor
					FY79	FY80	FY79 FY80	
ONR 242	Energy	Fuel-Water Emulsification	Chemical Engineering	Application of fuel- water emulsions to diesel engines and boilers. Reduced to fuel consumption and improved performance.	55	--	1.0 --	Fed--Off. Nav. Res.
ONR 243	Energy	Rechargeable Lithium Batteries	Basic Research	Battery based on or- ganic electrolyte con- taining cyclic ethers. Evaluation for Navy, commercial use.	70	200	1.5 5.0	Fed--Off. Nav. Res.
ONR 241	Environment	Shipboard Solid and Liquid Chemical Waste Storage and Transfer Pollution Abatement		Elimination of waste discharge from Navy vessels. Holding tank systems for all craft.	55	--	1.0 --	Fed--Off. Nav. Res.
ONR 253	Environment	3-D Water Flowmeter	Electrical Engineering	Acoustic current meter upgraded per- formance of new sewage treatment plant.	0	0	0.0 0.0	Fed--Off. Nav. Res.
ONR 252	Fire and Safety	Fire Drill for Water from Ice	Electrical Engineering	Electrically, powered thermal drill for penetrating Arctic ice effective for winter firefighting.	100	100	1.0 1.0	Fed--Off. Nav. Res.
ONR 240	Marine Technology	Hydraulic Transmission for Ship Propulsion	Ship Propulsion, Naval Architect- ure	Seawater as motive fluid, axial turbine provides thrust to propeller. Sub- stantial reductions in weight and space.	45	--	1.0 --	Fed--Off. Nav. Res.
ONR 251	Transpor- tation	Propagation of Acoustic Energy in the Arctic	Computer Technology	Computer program will compute propagation loss as a function of range and depth as well as pulse shapes. Will accommodate rough boundaries between fluid interfaces.	150	208	3.0 4.0	Fed--Off. Nav. Res.

PROJECTS PERFORMED BY THE U.S. NAVAL ACADEMY, ANNAPOLIS, MD
LISTED BY TECHNOLOGICAL AREA

Perform- ing Activity	Technologi- cal Area	Project Description	Navy Technology Applied	Progress	Funding (\$K)		Man-Years		Sponsor
					FY79	FY80	FY79	FY80	
USNA 172	General Assistance	Enrichment Program for Gifted School Children-- Extend Education	Math., Physical Science, Comp. Sci.	7 minicourses were taught. FY 80 will concentrate on math and computer science.	20	21	0.3	0.3	State--Anne Arundel County Schools
USNA 171	Marine Technology	European Dredging: A Review of the State of Art; to Improve Slip Maintenance by Navy	Sedimentation Control, Dredging	Attended conferences, visited experts, made site reviews, pre- pared report.	18	0	0.3	0.0	Fed--NAVFAC and Off. Nav. Res.
USNA 173	Marine Technology	Studies of Whales in Iceland and Their Manage- ment; Predict Arrival to Denmark Straits	Oceanography	Icelandic whaling operations observed, and film made.	3	0	0.1	0.0	Fed--Nat'l. Oceanic and Atmospheric Admin.

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INVENTIONS AND PATENTS

Technological Area	Performing Activity	Invention/Patent	Purpose	Potential Commercial Application
Analysis and Testing	CEL	Navy Case 62,357	Seafloor Corer	License--device to obtain high quality seafloor sediment cores 100 ft or greater
Analysis and Testing	DWT	Pat. 4,140,991 Underwater displacement probe	Measure movements of test model in water	Underwater model testing
Analysis and Testing	NMC	Navy Case 62,804 Adiabatic Laser Calorimeter	To measure absorbance of laser energy by a body	Testing and analysis
Communications	MIT	P. O. Serial 860586 "Cryptographic Systems and Method" Invention	New techniques for data encryption, authentications, and verification	Excellent
Communications	NORDA	Pat. 4,163,205 Acousto-Optical Device	To remove bubble pulse from reflected sonar signals	Underwater communications
Communications	NWSC	Pat. 4,164,186 Submarine Signal Fuse	Signal to be released underwater that releases markets for communication of the surface	Divers, Underwater Rescue
Communications	NMC	Navy Case 62,853 Phase Controlled Shuttering System	To synchronize the shutter of a motion picture camera with the vertical retrace of a TV raster	Stop-motion or slow-motion presentations
Communications	NOBC	Pat. 4,160,169 Navy Case 61,031	Parallel scanning system	Excellent--to scan microfiche
Communications	NRL	Navy Case 61,369	Laser-pulse annealing technique for improving the detectivity of infrared photoconductors	Good
Communications	NRL	Navy Case 63,436	Optical fiber-to-fiber couplers	Good
Communications	NRL	Navy Case 63,423	V-Ga-Ti filament/Cu-Ga-Al matrix superconducting wires	Excellent

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FY 1979

INVENTIONS AND PATENTS

<u>Technological Area</u>	<u>Performing Activity</u>	<u>Invention/Patent</u>	<u>Purpose</u>	<u>Potential Commercial Application</u>
Computer Technology	NSWC	Pat. 4,133,044 Failure-Resistant Pseudononvolatile Memory	To prevent loss of data stored in a shift register on occurrence of transients and power failure	Shift register users
Computer Technology	NSWC	Pat. 4,125,316 Navy Case 58,956	Integrated optical matrix multiplier	Excellent
Computer Technology	NSWC	Pat. 4,100,541 Navy Case 59,430	High-speed manchester encoder	Excellent
Computer Technology	NSWC	Pat. 4,118,709 Navy Case 59,323	Digital-to-graphic character generator	Excellent, graphically represents characters encoded in a digital signal
Computer Technology	NRL	Navy Case 63,341	Low barrier height epitaxial GeGaAs mixer diode	Good
Energy	CEL	Pat. 4,123,697	High-voltage generator	Excellent--utilizes generation of electrostatic charges on moving oil
Energy	CEL	Pat. 4,134,426	Seawater motor	Good--commutating or distributing valve for timing and distributing high-pressure seawater to a number of individual pistons
Energy	CEL	Pat. 4,135,116	Constant illumination control system	Excellent--constant illumination level control for continuously adjusting the level of artificial illumination to in an area of controlled lighting to complement available natural illumina- tion
Energy	CEL	Pat. 4,136,672	Solar energy collector	Good--collects solar radiation in form of heat and transfer it to a working fluid.
Energy	CEL	Pat. 4,137,098	Solar energy window	Good--energy absorbing venetian blind type device for generating electricity providing heat, and sun shade
Energy	CEL	Navy Case 62,065	Solar still using seawater	Excellent--code seawater is fed into bottom by a pipe perforated along horizontal length.

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INVENTIONS AND PATENTS

<u>Technological Area</u>	<u>Performing Activity</u>	<u>Invention/Patent</u>	<u>Purpose</u>	<u>Potential Commercial Application</u>
Energy	CEL	Navy Case 62,926	Active high-power band-pass filter	Pair--active circuit power line filter that provides superior filtering performance against power line anomalies and interference signals
Energy	CEL	Navy Case 64,177	Diver heater	Good--heat source for use in connection with a diver heater
Energy	CEL	Navy Case 64,178	Supercorrodng alloys	Excellent--operate like galvanic cells and react rapidly and predictably with seawater to produce heat and hydrogen gas
Energy	CEL	Navy Case 62,664	Sun tracker	Pair--used to maximize energy conversion
Energy	CEL	Navy Case 63,306	Oil coalescer	License--separates and removes oil and particulate solids from a dispersion oil and particulate solids in water or a water-based liquid
Energy	NSWSES	Navy Case 61,536 AC Battery Monitor System for Electrolyte Level and Temperature	Remote monitoring of lead-acid battery parameters	Fleets of vehicles
Energy	NSWSES	Navy Case 63,625 Battery Electrolyte Level and Circulation Sensor	Remote monitoring of lead-acid battery parameters	Fleets of vehicles
Energy	NSWC	Pat. 4,162,352 Battery with Boron Lithium Alloy Anode	To increase energy output per unit weight of electrochemical cells that use a molten lithium anode	Molten lithium-chlorine gas electrochemical batteries
Energy	NSWC	Pat. 4,158,649 Polymeric Membranes Which Contain Polyphenylquinoxalines and which are used as battery separators	Battery separator membranes resistant to oxidation and corrosion but with low electrical resistance	Alkaline electrolyte batteries

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INVENTIONS AND PATENTS

Technological Area	Performing Activity	Invention/Patent	Purpose	Potential Commercial Application
Energy	NSWC	Navy Case 62,989 Mass-Transport Separator for Alkaline Nickel-Zinc Cells	To increase operating life of nickel-zinc electrochemical cells	Alkaline nickel-zinc rechargeable electrochemical cells
Energy	NSWC	Pat. 4,084,047 Stable Alkaline Zinc Electrode	To increase operating life of alkaline electrochemical cells which use zinc anodes	Variety of alkaline cells
Energy	NMEF	Navy Case 63,814 Hydrogen and Water Getter	To use in sealed, oxygen-containing environments with batteries	
Energy	NMEF	Navy Case 63,815 Hydrogen and Water Getter	To use in sealed environments containing batteries and little or no oxygen	
Energy	NOBC	Pat. 4,166,884 Navy Case 62,235	Position insensitive battery	Excellent---to obtain full utilization of lithium thionyl chloride battery
Energy	NRL	Navy Case 62,396	Cis-trans fluoropolymer polyacrylate polymer	Good
Energy	NRL	Navy Case 62,397	Alkanediamide-linked polyphthalocyanines coordinated with SnCl_2	Excellent
Energy	NRL	Navy Case 63,502	Synthesis of Bis (3,4-dicyanophenoxy)-1,3-benzene----	Excellent
Energy	NRL	Navy Case 63,050	Dicyanophenyl-bisphenol synthesis of polyphthalocyanine	Excellent
Energy	NRL	Navy Case 63,481	Fluorinated polyether network polymers	Excellent
Energy	NRL	Navy Case 63,501	Synthesis of . . . a phthalonitrile monomer. . . .	Excellent
Energy	NRL	Navy Case 63,049	Dicyanophenoxy synthesis of polyphthalocyanine	Excellent

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INVENTIONS AND PATENTS

<u>Technological Area</u>	<u>Performing Activity</u>	<u>Invention/Patent</u>	<u>Purpose</u>	<u>Potential Commercial Application</u>
Energy	NRL	Navy Case 63,284	Polyphthalocyanine from (3,4-dicyanophenyl-bisphenol) phthalonitrile	Excellent
Environment	CEL	Pat. 4,156,648	Water cleaner	Good--methods and apparatus for treating water/waste water to remove grit, suspended and colloidal solids of organic and inorganic nature
Environment	DWT	Pat. 4,130,446 Antifouling Coating for Aluminum Structures	Aluminum objects designed to be buried, submerged	Marine craft and pipelines--to reduce drag produced by the attachment of barnacles and other organisms
Environment	NADC	Pat. 4,101,497 Sealer-Primer Coating	Sealant-primer coating	License granted to advanced coatings and chemicals
Environment	NADC	Pat. 3,993,510 Thixotropic Chemical Conversion Material for Corrosion Protection of Aluminum and Aluminum Alloys	MIL-C-81706, Class IA form N&V	License granted to AMCHEM Products Inc.
Environment	NADC	Pat. 4,157,991 Corrosion-Preventive Composition	Coating for metal surfaces	License granted to Bulk Chemical Distributors, Inc.
Environment	MSMC	Pat. 4,126,732 Surface Passivation of IV-VI Semiconductors with As_2S_3	To protect epitaxial films of lead chalcogenide from oxygen in air	Protection of semiconductors, etc., from air
Environment	MSMC	Pat. 4,163,682 Method for Disposing of Red Phosphorus Composition	To reclaim phosphoric acid from disposal of marine location markers	Limited--method for disposing pyro-technic composition
General Assistance	MSMC	Pat. 4,125,725 Phenylated Carboxyquinoxalines	To provide strong low void adhesive joints	Fabrication

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INVENTIONS AND PATENTS

Technological Area	Performing Activity	Invention/Patent	Purpose	Potential Commercial Application
Health and Medicine	NADC	Pat. 4,153,808 Novel Prostaglandin Derivatives	To protect heart against cardiac insults	Medical
Health and Medicine	NADC	Navy Case 63,137 Method of Preparing Prostaglandin B ₁ Derivatives	Improved method	Medical
Health and Medicine	NSWC	Navy Case 63,872 Immunochemical Analysis for Asbestos	To identify asbestos in air, water, or other environment including blood of humans	Identification of asbestos
Instrumentation	CEL	Pat. 4,156,842	Impedance meter	Excellent--measures transfer immitances, impedance and admittance of a linear electrical network having one or more ports
Instrumentation	CEL	Navy Case 62,786	Corona rings	Good--rings fabricated by a dielectric material rather than metal
Instrumentation	DWT	Pat. 4,129,087 Combination Pursuit and Compensation Display System	Provides operator of a machine control system with computational capability of an automatic control system	Control systems for submarines, aerospace vehicles, and industrial equipment
Instrumentation	DWT	Pat. 4,156,155 Combined Rotary Electrical Contact and Shaft Seal System	To provide new liquid-metal rotary electrical contact system	Generators, motors, and other horizontally mounted rotating machines
Instrumentation	DWT	Pat. 4,163,135 High-Current Switches Using Multi-Louvered Contact Strips	Small, compact, reliable, does not require water or oil cooling system	High-current (10,000-100,000 A) low-voltage (30-300 V) switching applications
Instrumentation	NSWC	Pat. 4,156,286 Solid State Data Recorder	Low-power, high-performance, accurate rugged analog data recorder	Rocketry, geology, aircraft and industry

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INVENTIONS AND PATENTS

<u>Technological Area</u>	<u>Performing Activity</u>	<u>Invention/Patent</u>	<u>Purpose</u>	<u>Potential Commercial Application</u>
Instrumentation	NOSC	4,117,967 Navy Case 60,034	Solder extractor apparatus--to repair microelectric circuitry	Excellent
Instrumentation	NOSC	4,117,588 Navy Case 61,234	Method of manufacturing three-dimensional integrated circuits	Excellent
Instrumentation	NOSC	4,147,942	Fast recovery one-shot for generation of trigger pulses	Excellent
Instrumentation	NOSC	Navy Case 60,779	Method and article of manufacturing an optical fiber connector	Excellent
Instrumentation	NOSC	Navy Case 61,505	Communitating narrow-band filter	Excellent
Instrumentation	NOSC	Navy Case 62,047	Method of LED manufacture	Excellent
Instrumentation	NOSC	Navy Case 63,221	Rat-race mixer with improved intermediate-frequency extractor	Excellent
Instrumentation	NOSC	Navy Case 63,754	Three-dimensional integrated circuits	Excellent
Instrumentation	NOSC	Pat. 4,138,615 Navy Case 59,541	Presettable integrating timing circuits	Excellent--to maintain vehicle speed below a level
Instrumentation	NOSC	Pat. 4,144,530 Navy Case 62,217	Combined intrusion sensor line	Excellent--security against intrusion into homes, plants
Marine Technology	CZL	Pat. 4,165,707	Deadweight anchor	Good--eliminates skating during free-fall
Marine Technology	CZL	Pat. 4,168,729	Underwater piling cutter	Excellent--self-gripping scissors-type shear cutting device for pile cutting
Marine Technology	DWT	Pat. 4,152,392 Chemical Cannister	To hold chemical to react with seawater to produce buoyant gas to supply to inflatable balloon	Underwater suspension systems

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INVENTIONS AND PATENTS

Technological Area	Performing Activity	Invention/Patent	Purpose	Potential Commercial Application
Marine Technology	NORDA	Invention Disclosures for Linear Acoustic Array, Flexible Thermal Array, Buoy Anchoring System, Condition-Responsive Cable	To support development of acoustic array in support of ocean measurement programs	Marine cabling anchoring
Marine Technology	NOSC	Pat. 4,143,400 Navy Case 58,762	Real-time optical mapping system	Excellent--to view underwater life, objects
Marine Technology	NOSC	Pat. 4,136,725 Navy Case 59,459	Motion compensating liquid holding tank	Excellent--small swimming pools
Transportation	CEL	Pat. 4,143,440	Causeway connector	Fair--pin connection system supporting a causeway section from a pipe piling
Transportation	CEL	Navy Case 61,552	Connector receiver for pontoon causeways	Fair--causeway bridge receiver equipped with a two-sided guillotine locking mechanism
Transportation	CEL	Navy Case 62,783	Safety hook for elevated causeway	Fair
Transportation	CEL	Navy Case 62,758	Buoy linkage	Good--allows most components to be over the side rather than on deck
Transportation	CEL	Navy Case 62,784	Breakaway pin release	Fair--releases a winch drum of a similar device
Transportation	CEL	Navy Case 63,961	Pile driver	License--system to place piles into the seafloor using pressure differential as driving force
Transportation	DWT	Pat. 4,132,500 Controllable and Programmable Fluid Flow Modulation System	To allow helicopters to fly at higher forward speeds	Helicopters--valve system to fly at forward velocities that are higher than conventional helicopters
Transportation	WTEC	Pat. 4,100,571 360 Nonprogrammed Visual System (See T2 123)	Visual simulation for flight training	Visual systems throughout aviation community

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NAVY TECHNOLOGY TRANSFER FOCAL POINTS

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APPENDIX B

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TECHNOLOGY TRANSFER PROJECTS FOR FEDERAL AGENCIES
LIST OF SPONSORS

Ames Research Center, NASA
Behavioral and Social Sciences, U.S. Army
Bureau of Land Management, Department of the Interior
Defense Advanced Research Projects
Defense Construction Supply Center
Defense General Supply Center
Defense Mapping Agency
Defense Nuclear Agency
Department of Commerce
Department of Energy
Federal Aviation Administration
Federal Highway Administration, DOT
Federal Laboratory Consortium for Technology Transfer
Federal Railroad Administration, DOT
Food and Drug Administration
George C. Marshall Space Flight Center, NASA
Goddard Space Flight Center, NASA
Immigration and Naturalization, Department of Justice
Independent Research and Development/Technology Utilization
Joint Cruise Missiles Project Office
Joint Logistics Command
Lawrence Livermore Laboratory, ERDA
Lewis Research Center, NASA

Los Alamos Scientific Laboratory, Department of Energy
Lyndon B. Johnson Space Flight Center, NASA
Maritime Administration
National Aeronautics and Space Administration
National Data Buoy Project, NOAA
National Environmental Research Center, EPA
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
National Science Foundation
Naval Air Systems Command
Naval Electronics Systems Command
Naval Facilities Engineering Command
Naval Material Command
Naval Medical Research and Development Command
Naval Ocean Research and Development Activity
Naval Oceanographic Office
Naval Postgraduate School
Naval Research Center
Naval Sea Systems Command
Naval Training Equipment Center
Navy NATO SEASPARROW
Nevada Operations Office, Department of Energy
Nuclear Regulatory Commission
Office of Hazardous Material, DOT
Office of Naval Research
Physical Security Systems Directorate ESD/AFSC/USAF
Rome Air Development Center, USAF

Safety/Isotope-Fuel, Department of Energy

Sea Grant College Program

Solar Research Institute, Department of Energy

Strategic Systems Project Office

U.S. Coast Guard

U.S. Geological Survey, Department of the Interior

U.S. Navy

U.S. Postal Service

Various

Veterans Administration

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TECHNOLOGY TRANSFER PROJECTS FOR FOREIGN GOVERNMENTS
LIST OF SPONSORS

Great Britain

International Government

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TECHNOLOGY TRANSFER PROJECTS FOR INDUSTRY AND SMALL BUSINESS
LIST OF SPONSORS

Aerojet Ordnance Manufacturing Company
American Safety and Flight System
Avondale Shipyard, Inc.
Bay Technical Associates, Inc.
Beckman Instruments, Inc.
Explosive Technology, Inc.
Firestone Coated Fabrics Co., Inc.
General Dynamics
Hughes Aircraft Company
Louisiana Power and Light
Mississippi Power and Light
M-R-S Mfg. Co.
Nus Corp.
Production Control Systems, Inc.
Raychem Corp.
Royal Industries, Inc.
Upjohn International
Vought Helicopter, Inc.

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TECHNOLOGY TRANSFER PROJECTS FOR NONPROFIT INSTITUTIONS
LIST OF SPONSORS

CTIP

Institute for Acoustical Research

International Research Group on Wood Preservation

National Science Foundation

New England Innovation Group

Metal Properties Council

Pacific Northwest Innovations Group

Rhode Island League of Cities and Towns

University of Connecticut

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TECHNOLOGY TRANSFER PROJECTS FOR STATE AND LOCAL GOVERNMENTS
LIST OF SPONSORS

California, San Diego (city and county)

California, Santa Barbara County

California, University of

California, University of BuMed and Surgery

Connecticut, Conference of Municipalities

Connecticut, General Assembly

Kansas Western Ground Water District #1

Maryland, Anne Arundel County Schools

Nevada, Carson City

New England Innovation Group

New Mexico, Santa Fe

South Carolina, Wildlife and Marine Resources Department

APPENDIX C

ABBREVIATIONS AND ACRONYMS

APL/JHU	Applied Physics Laboratory/Johns Hopkins University
CEL	Civil Engineering Laboratory
DARPA	Defense Advanced Research Projects
DOT	Department of Transportation
DWT	David W. Taylor Naval Ship Research and Development Center
FAA	Federal Aviation Administration
FLTC	Fleet Analysis Center
GIDEP	Government-Industry Data Exchange Program
HEW	Department of Health, Education and Welfare
INRED/TU	Independent Research and Development/Technology Utilization
JCMPO	Joint Cruise Missiles Project Office
NADC	Naval Air Development Center
NAEC	Naval Air Engineering Center
NASA	National Aeronautics and Space Administration
NATC	Naval Air Test Center
NAVAIRSYSCOM	Naval Air Systems Command
NAVELECSYSCOM	Naval Electronics Systems Command
NAVPAC	Naval Facilities Command
NAVMATCOM	Naval Material Command
NAVOC	Naval Oceanographic Office
NAVSEASYSYSCOM	Naval Sea Systems Command
NBIOL	Naval Biosciences Laboratory
NCSC	Naval Coastal Systems Center

NHRC	Naval Health Research Center
NMEF	Naval Mine Engineering Facility
NMR&D	Naval Medical Research and Development Command
NOAA	National Oceanic and Atmospheric Administration
NOC	Naval Oceanographic Office
NORDA	Naval Ocean Research and Development Activity
NOSC	Naval Ocean Systems Center
NPRDC	Navy Personnel Research and Development Center
NPS	Naval Postgraduate School
NRL	Naval Research Laboratory
NSWC	Naval Surface Weapons Center
NSWSES	Naval Ship Weapons Engineering Station
NTEC	Navy Training Equipment Center
NUSC	Naval Underwater Systems Center
NWC	Naval Weapons Center
NWSC	Naval Weapons Support Center
ONR	Office of Naval Research
USNA	U.S. Naval Academy