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COMMAND HISTORY FOR 1990

Annette V. Stout
Carmen C. Scheifers



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Command History for 1990

**Annette V. Stout
Carmen C. Scheifers**

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Technical Director (Acting)**

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**Navy Personnel Research and Development Center
San Diego, California 92152-6800**

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INTRODUCTION

Mission

The Navy Personnel Research and Development Center's (NPRDC) mission is to be the principal research and development center for the Department of the Navy's planning and utilization of manpower and personnel and to pursue a coordinated technical development program in the areas of education and training.

It is Center policy to only perform work that falls within the assigned mission, address high-priority Navy and Marine Corps requirements, and represent the most efficient use of available resources. We are determined to assist our sponsors, claimants, and customers in identifying and prioritizing requirements for manpower, personnel, and training (MPT) research and development.

Functions

In fulfilling the mission stated above, the Center performs the following functions assigned by the Commander, Naval Military Personnel Command:

1. Plans and develops effective MPT products for Navy/Marine Corps operational application. Provides technical assistance to support the transition and implementation of Center products.
2. Develops and maintains in-house Navy/Marine Corps scientific and technical expertise to provide corporate knowledge, corporate memory, technological innovation, "smart buyer" assistance, and real-world understanding necessary for the development and support of Navy/Marine Corps MPT.
3. Plans and conducts an effective technology base program (basic research, exploratory development, and advanced technology demonstrations) to meet existing and projected operational requirements and to maintain scientific and technical leadership in MPT areas.
4. Develops new systems and methods for determining manpower requirements, allocating manpower resources, developing personnel inventories, and distributing/assigning those inventories to improve military readiness and control costs.
5. Develops systems and procedures for recruiting, selecting, classifying, and utilizing officer, enlisted, and civilian personnel to improve performance and retention. Serves as the Chief of Naval Operation's (CNOs) primary personnel survey resource to coordinate and conduct attitude surveys in the Navy/Marine Corps and to develop new survey technology.
6. Develops and evaluates personnel testing systems and computerized adaptive testing (CAT) versions of the armed services vocational battery (ASVAB). Serves as lead Department of Defense (DoD) laboratory for overall management of CAT research, development, implementation, and scientific support of the system.
7. Develops training technologies to enhance personnel readiness.

8. Employs existing and emerging technologies in the development and application of training systems to alleviate Navy training problems and improve the Navy's operational readiness.

9. Develops and evaluates management and leadership systems for improving the effectiveness and readiness of Navy personnel and organizations.

10. Develops, evaluates, and applies innovative personnel assessment technology.

11. Provides the Marine Corps with research and development (R&D) support in MPT and organizational systems.

12. Provides independent analyses, technical advice, and consultation to research, development, test, and evaluation (RDT&E) and operational managers in matters related to the Center's mission.

13. Investigates, defines, and addresses operational problems related to fleet personnel performance.

14. Maintains a field office in Washington, DC for the purpose of conducting on-site projects.

15. Develops, installs, and provides life-cycle support for information management systems.

16. Provides information and reports to higher authority and the scientific community on the progress and accomplishments of the Center's program.

17. Provides technical support in the development of the Bureau of Personnel/Naval Military Personnel Command (BUPERS/NAVMILPERSCOM) long-range plan with regard to the infusion of appropriate technology, definition and prioritization of RDT&E requirements, and the transition of products into operational use.

18. Provides information and technical support to the Center's BUPERS/NAVMILPERSCOM Program Manager in all matters related to the Center's operation.

19. Develops and maintains liaison with Navy, DoD, and civilian RDT&E organizations for the exchange of information and the establishment of cooperative efforts in the MPT areas.

ORGANIZATION

Operating Philosophy

NPRDC is an applied research center, contributing to the personnel readiness of the Navy and Marine Corps. The Center develops better ways to attract qualified people to the naval services to: select the best, assign them where they are most needed, train each one effectively and efficiently, and manage our personnel resources optimally. By combining a deep understanding of operational requirements with first-rate scientific and technical abilities, the Center is unique in being able to develop new, useful knowledge and refine technology to address people-related issues. This dual expertise permits the Center to develop the technology base for improving the use of human resources within Navy systems and to apply state-of-the-art technology to solve emerging

problems. The organizational structure of NPRDC is represented in Figure 1. As a corporate asset, NPRDC is responsive to the needs of MPT managers in the Navy, Marine Corps, and DoD, to the operating forces, and to the shore establishment that trains and supports the fleet.

The R&D methods used by NPRDC are derived from behavioral, cognitive, economic, and social sciences as well as from applied mathematics and statistics. The application of these methods results in tangible products of use to the Navy and Marine Corps. NPRDC constantly searches for technological opportunities to improve personnel readiness and to reduce manpower costs. We are accountable to Commander, Naval Military Personnel Command, our sponsors, and our users for high productivity, strict ethics, honesty, integrity, professionalism, and perspective. The Center's reporting relationship is depicted in Figure 2.

As part of its operating philosophy, NPRDC seeks to do as much of its work as possible in the operational setting where the final products of the effort are intended to be used. This helps to ensure that the needs and requirements of the users are met and that the users themselves become familiar with the operational capabilities of the particular products. In some cases, because of the close researcher and user interaction, the output of interim or prototype products have been put into use before the final product has been completed. Examples of NPRDC's on-site research applications are shown in Table 1.

Further interaction with operational commands involve a variety of valuable MPT data bases that NPRDC has developed and maintained. Because NPRDC is an in-house, corporate laboratory, these data bases are readily available to support many different operational users and requirements. The data bases, descriptions, and principal users are shown in Table 2.

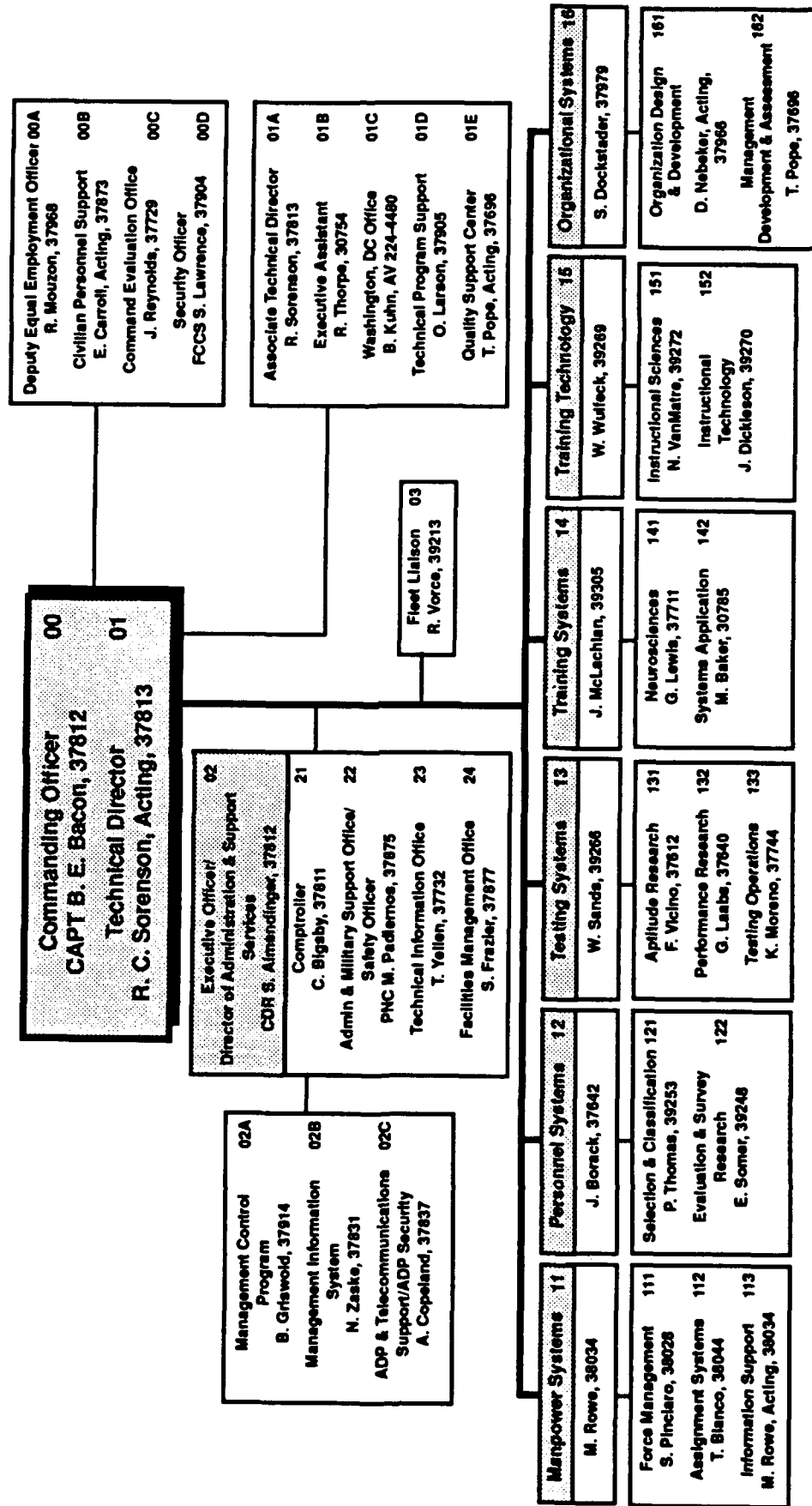
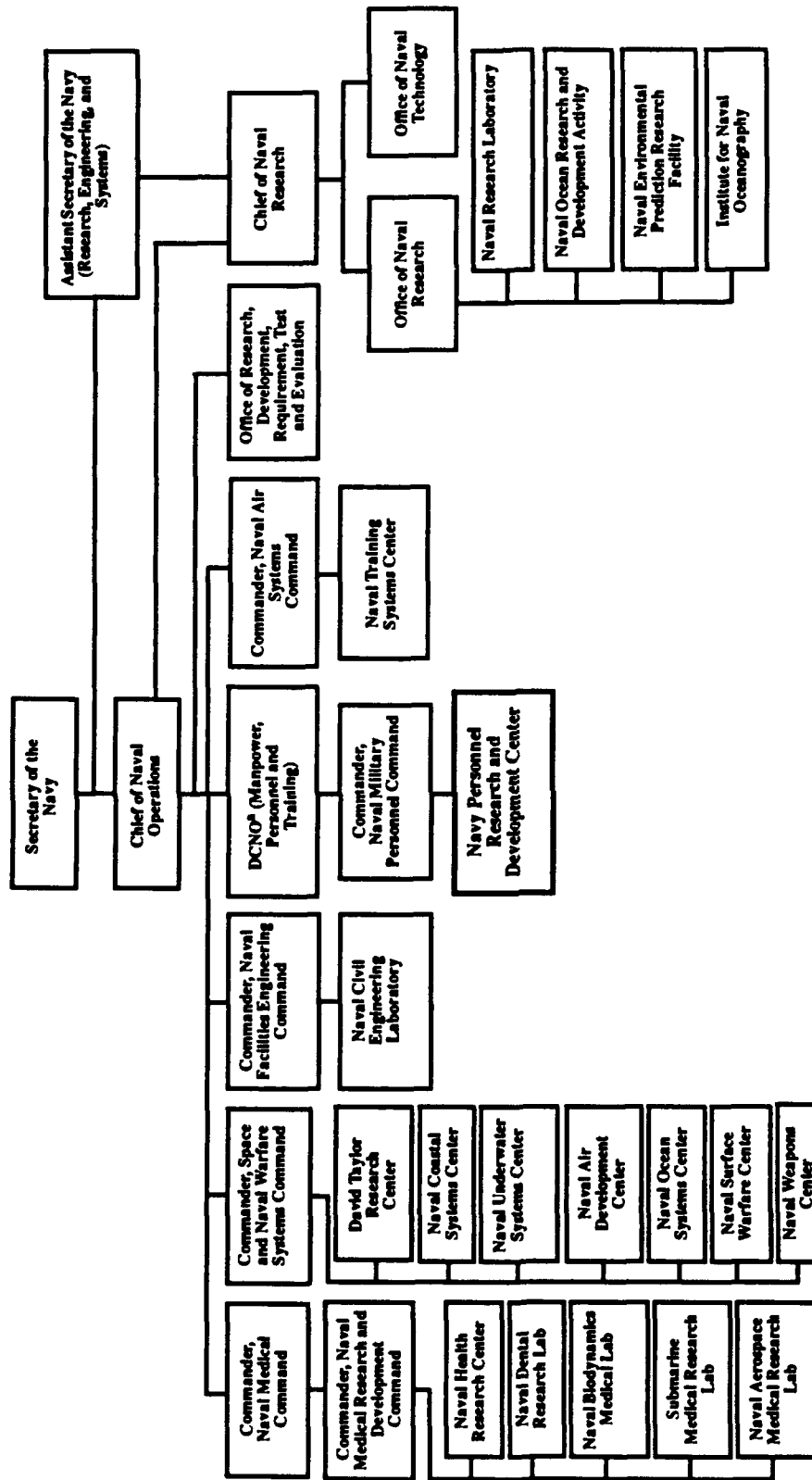


Figure 1. 1990 organization.



*DCNO = Deputy Chief of Naval Operations (OP-01).

^bNot an official Department of the Navy organization chart.

Figure 2. 1990 reporting relationships.
(Department of the Navy Research, Development, Testing, and Evaluation (RDTE&E) Organization)^b

Table 1
On-site Research Applications

Project	Implemented Product	Site
Manpower		
Advancement Interface System	Petty officer advancement planning model	Chief of Naval Operations (CNO) (OP-132C)
Force Analysis Simulation Technique	Enlisted inventory projection model	CNO (OP-132D)
Manpower Management Simulator	Manpower management training simulator	Deputy Assistant Secretary of Defense (Manpower), Headquarters Marine Corps (HQMC), CNO (OP-01)/Naval Military Personnel Command (NMPC)
Structured Accession Planning System for Officers	Officer manpower analyses system	CNO (OP-130)
Officer Personnel Information System	Officer information delivery system (IDS)	CNO (OP-130), (OP-136)
Defense Personnel Analysis Systems	Defense personnel IDS	Office of the Assistant Secretary of Defense (FM&P)
Enlisted Personnel Allocation and Nomination System (EPANS)	EPANS	Enlisted Personnel Management Center, NMPC
Permanent Change of Station (PCS)/Readiness Impact	PCS moves/unit readiness model	NMPC-46
Recruiting Effectiveness	Recruiting information delivery system	Chief of Naval Recruiting Command (CNRC), CNO (OP-136)
Recruiter Allocation	Recruiter allocation model	CNRC, CNO (OP-136)
Sea/Shore Rotation Management System	Sea shore rotation modelling system	CNO (OP-132)
Budget Obligation Analysis and Tracking System (BOATS)	PCS expenditure IDS/overseas station allowance impact model	NMPC-71
	Manpower budget execution management system	NMPC-7; Navy Finance Center, Cleveland, OH
Joint Specialty Officer (JSO)	JSO (IDS)	CNO (OP-130)
Enlisted Force Distributable Inventory	Skill personnel projection for for enlisted rotation	CNO (OP-132C)
	Enlisted Navy career options for retention	CNO (OP-132C)
	Enlisted management communities algorithm	CNO (OP-132C)

Table 1. (Continued)

Project	Implemented Product	Site
Manpower (Continued)		
Officer Distribution Management System (ODMS)	User/system documentation for ODMS	NMPC (N-47), (N-454)
	Unrestricted line (naval) officer Navy manning plan and officer distribution projection system moved to production region of N-47 computer	NMPC (N-47), (N-454), Placement Officers
	Design for expansion of ODMS, restricted line, limited duty, and chief warrant officers	NMPC-454
	Officer distributable projection system	NMPC-45
	Navy manning plan officer/officer manning information system	NMPC-45 NMPC-41, NMPC-42, NMPC-43, NMPC-44
Total Force Manpower Trade Offs	Shore officer manpower requirements model	CNO (OP-122), (OP-123)
	Shore enlisted manpower requirements model	CNO (OP-122), (OP-123)
	Officer manpower trade off model	CNO (OP-122)
PCS Moves Forecasting	PCS moves forecasting model	NMPC-73, NMPC-46
U.S. Marine Corps (USMC) Enlisted Planning System	Inventory projection model/ manpower planning model/ reenlistment planning model	HQMC (MPP-20)
Officer Assignment Decision Support System	Officer assignment	HQMC (MM), (MMOA-3)
Personnel		
Officer Selection Systems	Maintain/evaluate selection system	U.S. Naval Academy
Navy Occupational Data System Leadership Survey	Design of officer leadership training needs analysis	CNO (OP-152)
Experienced-based Learning	Assessment of Naval Operations (NAVOP) NAVOP-105 policy	CNO (OP-13)
Training Resources Management (TRAINTRACK)	"C" school planning systems	CNO (OP-112); Chief of Naval Technical Training (CNTT)
	TRAINTRACK	CNO (OP-112), (OP-13), NMPC-4; Navy Training Systems Center (NAVTRASYSSEN); CNTT; Chief of Naval Education and Training (CNET); Training Command, Atlantic Fleet

Table 1. (Continued)

Project	Implemented Product	Site
Testing Systems		
Classification and Assignment Within PRIDE (CLASP) ^a	Maintain/evaluate classification and assignment system	NMPC-48
Education and Training		
Career Systems Design	Rating continuum design methodology	CNO (OP-111)
USMC Individual Training Standards	Development of training standards for over 100 military occupational specialties	HQMC/Marine Corps Control Data Center (MCCDC)
Helo Map Interpretation and Terrain Association Course (MITAC)	Improvement of pilot navigation skills	USMC Squadrons
Infantry MITAC	Improved map interpretation for USMC ground combat personnel	Officer Basic School, Quantico; Division Schools, Camps LeJeune, Pendleton
Intelligent Maintenance Training System	Training of SH-3H, AE, and AD maintenance personnel	Naval Aviation Maintenance Training Group, North Island
Steam Propulsion Plant Operator Training System (STEAMER)	Training aid in teaching operation of 1200 lb propulsion system	Surface Warfare Officers School, Coronado
Electronic Countermeasures/ Electronic Counter-countermeasures	Teaching recognition of and response to electronic radar system	Fleet Combat Training Center, Pacific (FCTC-P); Fleet Combat Training Center, Atlantic (FCTC-L)
S-3B Feature Analysis Decision System	Training of personnel to recognize contacts on advanced radar system	VS-27; Fleet Aviation Special Operations Detachment, Cecil Field
S-3B Passive Acoustic Decision System	Training of advanced acoustic decision system	VS-27, VS-41, VP-30, VP-31; Anti-submarine Warfare Training Center, Pacific, Atlantic; Surface Ship Acoustic Analysis Center
E-2C Radar Operator Simulation Training	Training of tactical personnel in operation of radar system	VFW-110, VFW-120
H-53 Helicopter Maintenance Simulation	Computer training system for USMC H-53 maintenance personnel	MCAS, El Toro
Battle-management Assessment System and Raid Originator Bogie Ingress (BATMAN & ROBIN)	Human-computer interfaces for joint tactical information distribution system computer models	Naval Air Development Center

^aPersonalized Recruiting for Immediate and Delayed Enlistment (PRIDE).

Table 1. (Continued)

Project	Implemented Product	Site
Education and Training (Continued)		
	Assist in the development of AEGIS scenario development system (ASDS)	Naval Surface Weapons Center
	Support warfare analysis laboratory	Applied Physics Laboratory/ Johns Hopkins University
	Scenarios for adaptive functional allocation for intelligent cockpits	Naval Research Laboratory
	ROBIN front-end expert system to create complex scenarios (TACTIC)	NAVTRASYS SCEN
	Scenario generation for integrated undersea surveillance system	Naval Ocean System Center (NOSC)
	Front-end for battle force in-port trainer (BFTT)	NOSC
	New user interface for War-game Weapons and Tactical Analysis Center (WEPTAC) war-game; Phase II (WEPTAC II)	Naval Weapons Center (NWC)
	Support War-gaming Analysis Research Laboratory	Naval Postgraduate School
	Advanced tactics training for E-2C and E-3A crews	Carrier Airborne Early Warning Weapons School, Naval Air Station (NAS), Miramar
	Advanced anti-submarine warfare (ASW) and anti-surface warfare tactics P-3C	Commander Patrol Wings, Pacific, NAS, Moffett Field
	Interoperability of air and surface platforms for ASW	Sea-based Weapons Advanced Tactic School, NAS, North Island
	Maritime air superiority (MAS) F-14 fleet replacement crews	VF-124, NAS, Miramar
Skill Enhancement Program	Electrician's Mate (EM) "A" school	Naval Training Center (NTC), Great Lakes
Low Cost Micro-computer Training Systems (CBESS)	Officer and specialist threat memorization training	Navy and Marine Corps Intelligence Center, Dam Neck
	Threat memorization training	Commander Tactical Wings, Atlantic; NAS, Oceana
	Tactical action officer threat memorization training	FCTC-P, San Diego
	Helicopter crew threat recognition training	Aviation Research and Development Facility, Ft. Rucker

Table 1. (Continued)

Project	Implemented Product	Site
Education and Training (Continued)		
Authoring Instructional Materials	Remedial training job-oriented basic skills	CNTT
	Remedial training (SeaBees)	Naval Construction Training Centers, Gulfport, Port Hueneme
	EM "A" school	NTC, Great Lakes
	Refresher training	CNET Water Front Trailers, Long Beach, Norfolk
	70 weeks of instruction in various fields	Naval Education and Training Support Center, Pacific (NETSCPAC), Training Systems Development Department
	Over 500 weeks of instruction in engineering and electrical systems	Service School Command, NTC, Great Lakes
	Submarine systems	Naval Submarine School, New London
	TRIDENT engineering, operations, and strategic weapons training materials	TRIDENT Training Facilities, Kings Bay, Bangor
	Naval Sea Systems Command curricula	Naval Ship Weapons System Engineering Stations, Philadelphia, Port Hueneme
	SSN-21 systems	Newport News Shipbuilding
Artificial Intelligence (AI) Tools in Authoring	Technical training	AEGIS Training Center, Dahlgren
	Computerized front-end analysis tools	NETSCPAC, Training Systems
Joint Staff Officer Training System	Computerized front-end analysis tools	Service School Command, NTC, Great Lakes
	Training on joint staff operations	Joint Chiefs of Staff
AI in Explosive Ordnance Disposal	Computerized job aids	Explosive Ordnance Disposal Technology Center, Indian Head, MD
Courseware Portability	Programming standards for computer-based instruction/video	Office of the Secretary of Defense (OSD)

Table 1. (Continued)

Project	Implemented Product	Site
Organizational Systems		
Guidelines for Transportable Education and Training	Transportable lessons from Defense Systems Management College's (DSMC) Program Management Course and lessons learned in converting transportable course/lessonware	DSMC; Air Force Institute of Technology; Army Training and Doctrine Command, Ft. Monroe
Experimental Civilian Personnel Office	Evaluation of innovative civilian personnel practices with recommendations and guidelines for Department of Defense implementation	Headquarters, U.S. Army Communication and Electronics Command, Ft. Monmouth; Naval Supply Center (NSC), Norfolk; U.S. Air Force Academy; Defense Industrial Supply Center, Philadelphia; U.S. Army Europe, Heidelberg, Stuttgart, Frankfurt; Defense Depot, Memphis; Defense Contracting Administration Services Region (DCASR), Cleveland, Dallas, Boston, New York, Los Angeles, Chicago, St. Louis, Philadelphia; Air Base, Sembach; Air Force Base, Patrick, Chanute, Davis-Monthan, Minot, Andrews, Hickam, F. E. Warren; Defense Personnel Support Center; Defense Electronics Support Center; Defense Construction Support Center, Ft. Gordon, Ft. Eustis; NTC, San Diego; NAS, San Diego, Alameda, New London, Rota, Spain
Demonstration Project	Evaluation of Pacer Share Demonstration Project	Sacramento Air Logistics Center, Depot Region West Control Sites
Organizational Survey	Develop and administer survey	Navy Regional Contracting Center, San Diego
Naval Air Systems Command (NAVAIR) Total Quality Management (TQM)	TQM prototype	NAVAIR-04

Table 1. (Continued)

Project	Implemented Product	Site
Organizational Systems (Continued)		
DCASR/TQM	TQM prototype	DCASR, Philadelphia
TQM for OSD	TQM educational design	OSD, Under Secretary of Defense (Acquisitions)
Defense Communication Agency (DCA) TQM	TQM prototype	DCA
Navy Logistics Productivity Quality Improvement	TQM prototype	Naval Aviation Depot (NADEP), North Island; Sacramento Army Depot
	TQM assessment	Naval Shipyards, Pearl Harbor, Portsmouth; NADEP, North Island, Cherry Point; NSC, San Diego; Sacramento Army Depot
Productivity Gain-sharing	Gain-sharing system	Fleet Combat Direction Systems Support Activity, San Diego; NSC, Oakland, Pensacola; NADEPs, Cherry Point, North Island, Jacksonville, Norfolk; Naval Shipyards, Portsmouth, Charleston; Navy Regional Data Automation Center, Norfolk; Public Works Center, San Diego
Acquisition Technology	Technology enhancements in Program Management Offices	NAVAIR (PMA-273), (PMA-260)

Table 2

Data Bases

Data Base	Description	Sponsor/User
	Manpower	
Defense Planning Programming Category (DPPC) Models	DPPC models forecast manpower based on historical workload data	Chief of Naval Operations (CNO) (OP-12G)
Manpower, Personnel, and Training Assessment Subsystem	Requirements and authorization by DPPC sponsor, program element, claimant, skill, and pay grade	CNO (OP-12G)
Manpower Projection	Ships, aircraft, and manpower (historical)	CNO (OP-12G)
Force Analysis Simulation Technique (FAST) Fast Input Model (FAIM)	Historical enlisted Navy personnel data	CNO (OP-132)
Enlisted Management Community Data Base	Historical enlisted Navy personnel data	CNO (OP-132)
Enlisted Personnel Planning System	Historical and projected Navy enlisted personnel data	CNO (OP-132)
FAIM-O	Historical longitudinal Navy officer personnel data	CNO (OP-130)
Officer Personnel Information System	Historical, aggregated Navy officer personnel data	CNO (OP-130)
U.S. Marine Corps (USMC) Enlisted Personnel Data Base	Historical, longitudinal USMC enlisted personnel data	USMC (MPP-20)
USMC Officer Personnel Data Base	Historical, longitudinal USMC officer personnel data	USMC (MPP-30)
Qualified Military Available Data Base	Qualified military available projections for USMC recruiting regions	USMC
Recruiting Market Analysis Data Base	Historical demographic, economic, educational, production data by Navy recruiting areas, districts, and counties	CNO (OP-136), Chief of Naval Reserve Command (CNRC)
Defense Personnel Analysis System	All-service historical and projected officer and enlisted personnel data	Office of the Assistant Secretary of Defense (OASD) (FM&P)
Budget Obligation Analysis and Tracking System	Navy military personnel entitlements data	Naval Military Personnel Command (NMPC) (NMPC-7)

Table 2. (Continued)

Data Base	Description	Sponsor/User
Manpower (Continued)		
Recruiter (IDS)	Permit easy retrieval, display, and analysis existing recruiting management data	CNRC, CNO (OP-136)
Standard Personnel Measures	Measuring personnel flows	CNO (OP-132F), (OP-132F)
Joint Specialty Officer (JSO) (IDS)	Estimate the impact of JSO program on non-JSO community manning and promotion	CNO (OP-130), NMPC
Personnel		
Naval Reserve Officer Training Corps	Applicant information, school performance information, fitness report (FITREP) data	Chief of Naval Education and Training (N-1A)
Naval Academy	Applicant information, school performance information, FITREP data	U.S. Naval Academy (Dean of Admissions)
Officer Career	Questionnaire information, officer master file information	CNO (OP-130E)
Navy Integrated and Training System	Navy class "A" school information merged with Armed Services Vocational Aptitude Battery (ASVAB) data used for ASVAB validation and related studies and analyses	CNO (OP-135L), NMPC-48
Computer Managed Instruction Data ^a	Similar to Navy integrated training and reporting system data, merged with ASVAB data and used for ASVAB validation and related studies and analyses	CNO (OP-135L), NMPC-48
Joint Officer Monitor Officer	Officer and billet data pertaining to past and present joint duty assignments for USMC officers	Headquarters, Marine Corps (MMOA-3)
Testing Systems		
Classification and Assignment Within PRIDE (CLASP) ^a	Accession data, job options presented by CLASP	NMPC-48
PRIDE Data ^b	Recruitment information (data of enlistment, targeted rating) from automated classification system (CLASP) used for studies on Navy recruits and creating regression formulas used in CLASP	CNO (OP-135L), NMPC-48

^aPersonalized Recruiting for Immediate and Delayed Enlistment (PRIDE).

^bData bases are extracted from larger data bases for use in responding to consumer's requests for data analysis.

Table 2. (Continued)

Data Base	Description	Sponsor/User
Testing Systems (Continued)		
Adaptability Screening Profile	Biographical, demographic, and 36-month attrition information on military service enlisted applicants and accessions	CNO (OP-135)
Defense Manpower Data Center/ ASVAB Data ^b	Navy enlisted applicants and accessions by fiscal year used for validation and related studies and analyses	CNO (OP-135L), NMPC-48
American Youth Population Data	Maintained 1980 metric sample for ASVAB (youth 18-23), used for calibrating new forms of ASVAB, developed population parameters needed to correct for restriction of range in ASVAB validation samples	CNO (OP-135L), NMPC-48
Reading Grade Level	Examinee data on both ASVAB and reading grade tests, used to estimate reading ability of military accessions without administering a reading test	OASD (FM&P)
Education and Training		
Operations Specialist (OS) Career Systems Design Rating	Materials, information, and products resulting from the OS rating training continuum	CNO (OP-111J)
Electronic Warfare (EW) Career Systems Design Rating	Materials, information, and products resulting from the EW rating training continuum	CNO (OP-111J)
Training Resources Management	Historical longitudinal Navy training and personnel data—an SSN-based data file	CNO (OP-11), Chief of Naval Education and Training
Organizational Systems		
Total Quality Management (TQM)/ Productivity Gain-sharing (PGS)	Maintained data on status of implementation of TQM and PGS for Navy organizations with 50 or more civilian employees	Office of the Secretary of the Navy (SECNAV)
Organizational Systems	Maintained data on organizational culture, climate, and effects of implementing TQM and PGS for those organizations participating in follow-up evaluations of TQM and PGS	SECNAV

^bData bases are extracted from larger data bases for use in responding to consumer's requests for data analysis.

Commanding Officer/Technical Director Biographies

Captain Barton E. Bacon, III assumed his present duties as Commanding Officer, NPRDC in June 1986.

Captain Bacon graduated from the University of Washington, Seattle, in 1959 and entered the Navy as an Aviation Officer Candidate at Pensacola, Florida. He was commissioned an Ensign in 1960.

Following a tour aboard USS YORKTOWN (CVS 10), **Captain Bacon** attended Submarine School and subsequently served aboard five San Diego-based submarines: USS REDFISH (SS 490), USS VOLADOR (SS 490), USS SEGUNDO (SS 398), USS SALMON (SS 573) as Executive Officer, and USS TROUT (SS 566) as Commanding Officer. Under his command, TROUT was the only fast-attack diesel-electric submarine selected from both the Pacific and Atlantic Fleets for the Battle Efficiency "E" award.

Captain Bacon served on the staffs of Commander Submarine Squadron THREE, Commander Submarine Group FIVE, Commandant Thirteenth Naval District, Chief of Naval Personnel, and Chief of Naval Operations. During his Washington tours, he served as the Enlisted Rating Coordinator for submarines while assigned to the Bureau of Naval Personnel and as the Primary Action Officer in the Joint Chiefs of Staff arena for development of Joint Strategic Planning Documents while assigned to OPNAV Plans and Policy Office (OP-06).

After serving as Commanding Officer, Submarine Training Facility, San Diego, from 1980 to 1983, **Captain Bacon** was assigned as Commanding Officer of the amphibious ship USS CLEVELAND (LPD 7). While under his command, CLEVELAND was nominated for the Arleigh Burke Award, representing the most improved ship in the Pacific Fleet.

Captain Bacon comes from a submarine family. His father, RADM Barton E. Bacon, II, USN (Ret) (deceased) commanded the submarine USS PICKEREL (SS 177) through five war patrols during World War II. His twin brother, VADM Roger Bacon, USN, is currently assigned as Assistant Chief of Naval Operations, Undersea Warfare, and his younger brother, Commander Dan Bacon, USN (Ret), served for 20 years in the submarine force. At one period during their respective careers, each brother was in command of a Pacific Fleet submarine.

Captain Bacon is a graduate of the National War College of the National Defense University, the Armed Forces Staff College, and the Senior Officer Material Readiness School.

Captain Bacon is married to the former Mary C. Mutscheller of Beaver Falls, Pennsylvania, and resides in the Rancho Bernardo community of San Diego, California.

Dr. Richard C. Sorenson has served as the Acting Technical Director, NPRDC since February 1990.

He has been employed at the Center since its formation in 1973 and has planned, directed, and carried out research and development in personnel, training, human factors, neurosciences, and organizational systems. Since 1988, he has been the Associate Technical Director.

Before the Center was formed, **Dr. Sorenson** was on the staff of the Naval Personnel and Training Research Laboratory, the Army Research Institute, the University of Washington, and the American University.

Dr. Sorenson received his B.S. degree from the University of Idaho in 1959, and his M.S. and Ph.D. degrees from the University of Washington in 1962 and 1965 majoring in psychology. Later he studied mathematics, statistics, and economics at George Washington University. He is a licensed psychologist.

Dr. Sorenson was the recipient of the 1989 NPRDC Professional Publications Award and the 1990 Commander's Award for Management Excellence. He is a fellow of the American Association for the Advancement of Science. He is the author of over 40 professional contributions including book chapters, journal articles, and papers presented at professional meetings.

Dr. Sorenson is married to the former Bertha Hartung. They have eleven children ranging from 8 to 30 years of age.

Chronology of 1990 Events

January

New Employees

Jose L. Cofresi
Clerk Typist
Code 16
GS-322-04

Lewis R. Gollub
Personnel Research Psychologist
Code 15
GS-180-12

Promotions

Muriel L. Baker
Management Resources Assistant
Code 14
GS-303-07

John A. Ellis
Personnel Research Psychologist
Code 15
GS-180-14

Paul P. Foley
Personnel Research Psychologist
Code 13
GM-180-14

Elsie M. Grier
Audio Visual Production Specialist
Code 23
GS-1071-07

Christine E. Hall
Visual Information Specialist
Code 23
GS-1084-07

Loralee Hartmann
Computer Scientist
Code 11
GM-1550-13

Anne L. Wahrenbrock
Computer Specialist
Code 12
GS-334-11

Royal S. Magnus
Personnel Research Psychologist
Code 13
GS-180-12

Kathleen E. Moreno
Supv. Personnel Research Psychologist
Code 13
GM-180-14

Renee J. Rothlein
Computer Specialist
Code 12
GS-334-05

Daniel O. Segall
Personnel Research Psychologist
Code 13
GS-180-13

M. Joyce Shettel-Neuber
Personnel Research Psychologist
Code 16
GM-180-13

Stephen W. Sorensen
Operations Research Analyst
Code 12
GS-1515-13

Gary L. Spurr
Computer Specialist
Code 11
GS-334-12

Jose G. Suarez
Personnel Research Psychologist
Code 16
GS-180-12

Jerry L. Vogt
Personnel Research Psychologist
Code 15
GS-180-13

Two Upward Mobility vacancies were filled under Merit Promotion Announcement #89-30 advertising two Computer Specialist. Out of 13 applicants, **Ren'ee Rothlein** was selected for the vacancy in Code 12 and **Judith Dudley** was selected for the vacancy in Code 11.

Product Award

Glenn A. Richards
Feature Analysis Decision System (FADS) Training Materials

February

New Employees

Marguerite A. Fitch
Personnel Research Psychologist
Code 15
GS-180-07

Jennifer A. Hightower
Library Technician
Code 23
GS-1411-04

EWC Mike Pfaff
Code 142

FC1 T. J. Tijerina
Code 01E

Separations

Inez M. Moyo
Clerk Typist
Code 00
GS-322-04

Julio I. Pasion
Supply Clerk
Code 21
GS-2055-04

Charles K. Rutherford
Clerk Typist
Code 00B
GS-322-04

Patricia A. Smith
Management Assistant (Typing)
Code 16
GS-344-07

Cynthia M. West
Personnel Research Psychologist
Code 14
GS-180-12

Visits

Research on the Learning and Motivational Effects of Training Media, a colloquium address by Professor **Richard E. Clark**, Department of Educational Psychology, University of Southern California, was presented on 1 March.

Lorraine Shelton, Naval Military Personnel Command, Management Services Division (NMPC-024), visited the Center to outline specifics about the Center's Efficiency Review, which began on 12 March and continued for 2 weeks.

In celebration of Black History Month, the featured guest speaker was **Dr. Alice Siwundhla**. Dr. Siwundhla's impressive background stemmed from a mud hut in the African bush to a fulfilled place as a respected scholar, an internationally known speaker, author, and entrepreneur.

Professional Award

The 1988 Koopman Prize for the best paper published in military operations research was presented to **Joe Silverman, Ralph E. Steur, and Alan W. Whisman**. Their paper, "A Multi-period, Multiple Criteria Optimization System for Manpower Planning," published in the *European Journal of Operational Research*, Vol. 34 (1988) was awarded the honors, given by the Operations Research Society of America.

Other finalists in the competition included **Timothy T. Liang** and **Ben B. Buclatin** for their paper "Improving the Utilization of Training Resources Through Optimal Personnel Assignment in the U.S. Navy," published in the *European Journal of Operational Research*, Vol. 33 (1988) 183-190.

1989 Professional Publication Awards

The 1989 Professional Publication Award was presented in February 1990 to **Greg W. Lewis** and **Richard C. Sorenson** for the paper entitled, *Evoked Brain Activity and Personnel Performance* which appeared in Dillon, R. F. & Pellegrino, J. W. (Eds.). (1989). *Testing: Theoretical and Applied Perspectives*, New York: Praeger. Honorable Mention was presented for the paper entitled *Cognitive Correlates of General Intelligence: Toward a Process Theory of g*, by **Larson, G. E. & Saccuzzo, D. P.**

Product Award

Roy Jordan

Skilled Personnel Projection for Enlisted Retention (SKIPPER)

March

New Employees

Matthew F. Keblis

Operations Research Analyst

Code 11

GS-1515-11

Separations

Wendy N. Arent

Training Specialist

Code 15

GS-1712-11

Roya L. Bauman

Personnel Research Psychologist

Code 16

GS-180-11

Edward E. Dixon

Librarian

Code 23

GS-1410-09

Regina L. Burch

Personnel Research Psychologist

Code 12

GS-180-09

Kewanda C. Covington

Clerk

Code 00A

GS-303-02

Marguerite A. Fitch

Personnel Research Psychologist

Code 15

GS-180-07

Stephanie A. Gullett

Personnel Research Psychologist

Code 13

GS-180-07

Jennifer A. Hightower

Library Technician

Code 23

GS-1411-04

Carolyn Huynh
Computer Specialist
Code 13
GS-334-09

Mark H. Inlow
Statistician
Code 14
GS-1530-09

Cheryl C. Louie
Operations Research Analyst
Code 11
GS-1515-09

Royal S. Magnus
Personnel Research Psychologist
Code 13
GS-180-12

Cheryl A. Matheson
Personnel Research Psychologist
Code 15
GS-180-07

Patricia G. Roth
Personnel Research Psychologist
Code 12
GS-180-09

Ann C. Rybowskiak
Personnel Research Psychologist
Code 16
GS-180-11

Diane M. Sawyer
Personnel Research Psychologist
Code 13
GS-180-07

Laura E. Swirski
Personnel Research Psychologist
Code 12
GS-180-09

David G. Ward
Personnel Research Psychologist
Code 13
GS-180-09

Civilian Personnel Hiring and Management Restrictions for FY90

Due to managing to payroll and funding shortages, the following restrictions were implemented: (1) total freeze on all promotions, (2) stop all overtime, (3) not later than 1 April 1990, employees in the following employment categories were to be released: Full time temporaries, part time temporaries, re-employed annuitants, stay-in-schools, and summer aides. Intermittents and experts/consultants could not be worked.

(Source: Administrative message from Chief of Naval Personnel regarding Secretary of the Navy directive.)

Personnel Update

Former NPRDC employee, **Dr. Laurie Broedling**, has a new title: Deputy Under Secretary of Defense (Total Quality Management).

Special Presentation

A briefing on Fraud Awareness was presented on 6 and 7 March by **Cliff Link**, Assistant Agent-in-Charge, Naval Investigative Service (NIS).

Promotions

Marguerite A. Fitch
Personnel Research Psychologist
Code 15
GS-180-07

Jennifer A. Hightower
Library Technician
Code 23
GS-1411-04

Award Ceremony

Dr. Richard C. Sorenson received the NPRDC Commander's Award for Management Excellence. The award was presented in recognition of superior contributions to the management of NPRDC and leadership of several departments and major programs.

Product Award

Susan Pinciario
Algorithm for Identifying/Classifying Enlisted Management Communities

Quarterly Team Award

Marie Thomas
Amy Culbertson
Paul Rosenfeld
Jack Edwards
Stephanie Kewley
Paul Magnusson
Sherry Patrick
Women and Minorities in the Navy

April

Separations

Glenn J. Ackerman
Security Officer
Code 00D
GS-080-12

Mark H. Blankenship
Personnel Research Psychologist
Code 14
GS-180-11

George B. Semb
Personnel Research Psychologist
Code 15
GS-180-12

Visitors

CAPT Paul Dykeman, Deputy Chief of Naval Operations (OP-13).

Charley McPeters, Deputy Chief of Naval Operations (Manpower, Personnel, and Training) (OP-01B2).

RADM S. F. Gallo, Commander, Naval Military Personnel Command/Assistant Deputy Chief of Naval Operations (Manpower, Personnel, and Training) (OP-01).

Product Award

Bernie A. Rafacz

A Test Administration User's Manual for the Accelerated CAT-ASVAB Project (ACAP) System

May

New Employees

Douglas J. Hentschel
Operations Research Analyst
Code 11
GS-1515-12

Joyce E. Silberstang
Personnel Research Psychologist
Code 01E
GS-180-12

Separations

James S. McMichael
Technical Director
Code 01
ES-101-00

Jerry L. Vogt
Personnel Research Psychologist
Code 14
GS-180-13

Miriam W. Schustack
Personnel Research Psychologist
Code 15
GS-180-12

Diane Williams
Personnel Research Psychologist
Code 15
GS-180-12

Promotions

Patricia Ann Nealy
Administrative Officer
Code 11
GS-341-09

Mike C. Yau
Computer Scientist
Code 11
GS-1550-11

Product Award

James G. Chadbourne

USMC Individual Training Standards: Models, Guides, and Objectives for Selected MOSs

June

New Employees

Thomas L. Diamond
Personnel Research Psychologist
Code 01E
GS-180-11

Separations

Stephen W. Ferrier
Personnel Research Psychologist
Code 16
GS-180-12

Visitors

Tom Hamell and Jim Holzworth, Coast Guard Research and Development Center, Groton, CT.

Visiting Speaker

Dr. Carlos Rigby spoke on the Leadership and Organizational Effectiveness Program underway at the Army Research Institute.

Promotions

Marci D. Barrineau
Documentation and Information Specialist
Code 23
GS-1001-07

Norberto B. Caceres
Travel Clerk
Code 21
GS-2132-05

Dennis Cheng
Computer Specialist
Code 13
GS-334-11

Steven L. Dockstader
Supv. Personnel Research Psychologist
Code 16
GM-180-15

Anthy J. Dunlap
Computer Specialist
Code 13
GS-334-07

Janet D. Held
Personnel Research Psychologist
Code 13
GS-180-12

Barbara A. Morris
Personnel Research Psychologist
Code 15
GS-180-11

Antonio R. Rodriguez
Industrial Engineer
Code 16
GS-896-12

Susan R. Ryan
Secretary (Typing)
Code 12
GS-318-06

Amado E. Santiago
Computer Specialist
Code 13
GS-334-11

Sheila K. Stevens
Personnel Assistant
Code 00B
GS-203-06

Joyce E. Ward
Management Analyst
Code 16
GS-345-09

New Department Director

Steve L. Dockstader
Organizational Systems Department
Code 16

Product Award

John S. Folchi
Functional Descriptions and Test Plans for ECAT Tests

Quarterly Team Award

Dr. Pat Boyle
Meei-you Lee
Carol Mullins
Chester Pabiniak
USMC Force Management

New Chief of Naval Operations

ADM Frank B. Kelso II was confirmed on 22 June as the next Chief of Naval Operations.

July

New Employees

Richard A. Plumlee
Security Officer
Code 00D
GS-080-11

CDR Michael G. Brattland relieved **CDR Sylvia S. Almendinger** as Executive Officer.

Separations

Yvonne S. Baker
Computer Assistant
Code 21
GS-0335-5

Lisa L. Olsen
Personnel Research Psychologist
Code 16
GS-180-9

Ronald B. Tiggle
Personnel Research Psychologist
Code 12
GM-180-13

Karyll N. Shaw
Personnel Research Psychologist
Code 16
GS-180-12

Reassignments

Dianne J. Murphy
Personnel Research Psychologist
Duty Station: Washington, DC
Code OP-01B2
GS-180-12

Barbara E. Taylor
Education Specialist
Duty Station: Pensacola, FL
Code 01F
GS-1701-12

Visitor

Dr. Lauire Broedling, Deputy Under Secretary of Defense for Total Quality Management

Commanding Officer's Special Achievement Award

Marci D. Barrineau and Arneva Y. Johnson

Product Award

Mark D. Chipman
Development of Recruiter Information Delivery System Prototype

Broedling Makes News

An article about former NPRDC Department Director, **Dr. Laurie Broedling** and Total Quality Management (TQM) appeared in the *Federal Times*. **Dr. Broedling** is currently Deputy Under Secretary of Defense for TQM.

In the article, **Dr. Broedling** emphasized that TQM is not a "program." "Programs have finite lives--they're created to accomplish a certain thing and when its done they go away," **Dr. Broedling** said.

The article continued, "**Broedling**, DoD's first Deputy Under Secretary for TQM, views the management approach as cultural change with an endless half-life that unlike a program, cannot be contained in a budget line or managed from the top of an organization."

For more information, see 2 July 1990 edition, page 3 of *Federal Times*, which can be found in the Center library.

August

Separations

Michelle D. Hardy
Clerk Typist
Code 16
GS-322-4

Nenita E. Mata
Accounting Technician
Code 21
GS-525-06

Promotions

Linda M. Doherty
Supv. Personnel Psychologist
Code 01E
GM-180-15

Donald H. Hewitt
Personnel Research Psychologist
Code 14
GS-180-11

Bertha R. Mack
Personnel Assistant
Code 00B
GS-203-06

Dianne J. Murphy
Personnel Research Psychologist
Code 12
GS-180-12

Glenn A. Richards
Personnel Research Psychologist
Code 14
GS-180-12

Commander's Award for Management Excellence

Carmen C. Scheifers

Commanding Officer's Special Achievement Award

Susan R. Ryan

Navy Achievement Medal

BT1 Fred Hunt

Product Award

Bob Harris

Laser Effects and Mitigation Strategies

Desert Shield Support

On 8 August 1990, Desert Shield was implemented when U.S. airborne troops and fighter aircraft began arriving in Saudi Arabia.

Ken Mitoma (Contracts, Code 21) was called to active duty with the U.S. Coast Guard from 14 September 1990 through 31 October 1990. He reported to the Coast Guard Station Los Angeles/Long Beach and was subsequently sent, along with his Port Security boat crew, to Station Channel Islands, Oxnard, CA.

September

Separations

Milton M. Chen

Operations Research Analyst

Code 11

GS-1515-12

Anne L. Garcia

Personnel Research Psychologist

Code 14

GS-180-12

Paul L. Nunez

Personnel Research Psychologist

Code 14

GS-180-12

Ralph E. Steuer

Operations Research Analyst

Code 11

GS-1515-12

Promotions

Jack E. Edwards

Personnel Research Psychologist

Code 12

GS-180-13

Visitor

RADM Raymond M. Walsh, Assistant Vice Chief of Naval Operations (OP-09B) visited the Center for briefings on various R&D projects and to meet with several NPRDC department directors.

Meritorious Service Medal

Commander M. G. Brattland

Product Award

Doug Wetzel
Computer-based Educational Software System

Quarterly Team Award

Joyce Shettel-Neuber
John Sheposh
Carol Hayashida
Evaluation of Project EXPO

October

Promotions

Audrey L. Finley
Secretary (Typing)
Code 11
GS-318-05

Product Award

Douglas J. Hentschel
Analysis of the Recruiting and Retention of Navy Physicians

November

New Employees

Clemente Corona
Student Trainee (Supply Management)
Code 02
GS-2099-03

Carlos R. Wales
Clerk
Code 04
GS-303-03

Marian M. Esser
Accounting Technician
Code 02
GS-525-07

Separations

Sherry Z. Patrick
Secretary (typing)
Code 12
GS-318-05

Retired

Amelia E. Alhambra
Management Assistant
Code 00
GS-344-09

James J. McGrath
Supv. Personnel Research Psychologist
Code 14
GM-180-15

Promotions

Mark D. Chipman
Supv. Operations Research Analyst
Code 11
GM-1515-14

Charles W. Johns
Personnel Research Psychologist
Code 13
GS-180-11

John Kantor
Personnel Research Analyst
Code 12
GS-180-12

Product Award

April M. Moranville
John Schuler
Don H. Hewitt
OSC Garry Kincaid
EWC Michael Pfaff
Donna Holloman

Career Systems Design: Rating Continuum Workshops and Recommendations

December

New Employees

Bernice McGhee
Secretary (typing)
Code 11
GS-318-05

Monica Santiago
Clerk Typist
Code 00
GS-322-03

Separations

Jose L. Cofresi
Clerk Typist
Code 16
GS-322-04

Kim H. Phan
Computer Specialist
Code 04
GS-334-09

Retired

Allen M. Megrditchian
Operations Research Analyst
Code 14
GS-1515-12

Promotions

James M. Apple
Computer Specialist
Code 15
GS-334-12

Larry K. Carroll
Computer Specialist
Code 15
GS-334-12

Margen H. Metcalfe
Computer Specialist
Code 15
GS-334-11

Paul H. Radtke
Personnel Research Psychologist
Code 15
GS-180-12

Product Award

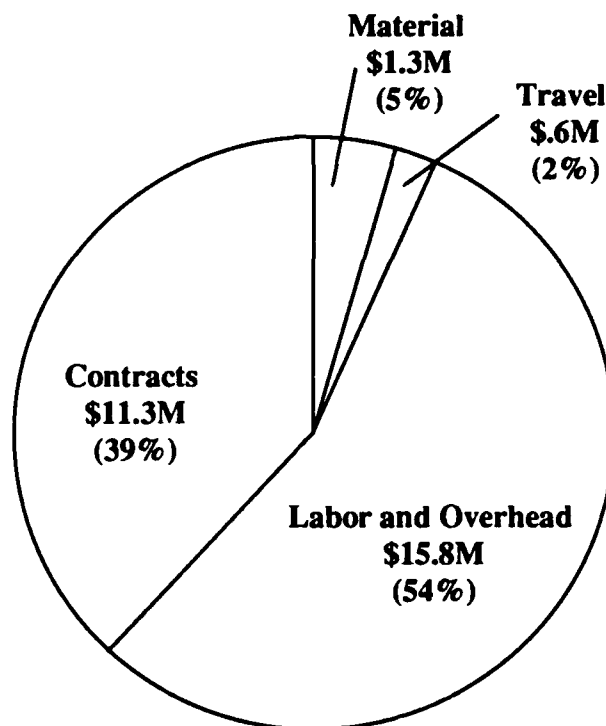
Thomas A. Blanco
Gary A. Ropp
Sea/Shore Rotation Modelling System (SSRM)

HISTORY OF THE CENTER

- 1 Jul 51 The Naval Personnel Research Unit, San Diego, CA was established under the Bureau of Naval Personnel to provide a personnel research facility close to the operating forces.
- 1 Jul 52 The U.S. Naval Personnel Research Field Activity was established in Washington, DC to provide an activity close to Navy users and systems.
- 26 May 61 SECNAV Notice 5450 redesignated the two field activities as U.S. Naval Personnel Research Activities.
- 10 Dec 68 OPNAV Notice 5450 redesignated the Naval Personnel Research Activity, Washington, DC as the Naval Personnel Research and Development Laboratory due to increased emphasis on R&D.
- 1 Aug 69 The Chief of Naval Operations redesignated the Naval Personnel Research Activity, San Diego, CA as the Naval Personnel and Training Research Laboratory.
- 1 May 73 The Secretary of the Navy approved the establishment of the Navy Personnel Research and Development Center (NPRDC), San Diego, CA to provide a corporate personnel laboratory with an in-depth capability in the behavioral and management sciences. This action consolidated those research functions assigned to the Naval Personnel Research and Development Laboratory, the Naval Personnel and Training Research Laboratory, and the Personnel Research Division of BUPERS.
- 17 May 75 OPNAV Notice 5450 changed command and support responsibility for NPRDC from the Chief of Naval Personnel (CNP) to the Chief of Naval Material (CNM).
- 22 May 80 NAVMATINST 5450.27B modified the mission statement to include technical and consultant support and services to CNO in the design, development, and operation of the Navy personnel system.
- 1 Oct 80 The Commanding Officer, NPRDC directed to report for additional duty to DCNO (Manpower, Personnel, and Training) (OP-01).
- 6 May 85 The disestablishment of CNM changed command and support responsibility for NPRDC from CNM to Chief of Naval Research (CNR).
- 24 Feb 86 The Secretary of the Navy changed command and support responsibility for NPRDC from CNR to Space and Naval Warfare Systems Command (SPAWAR).
- 27 Mar 88 Management control of NPRDC was transferred from SPAWAR to CNP/Commander, Naval Military Personnel Command (NMPC). NMPC was charged with direct management of NPRDC.

RESOURCES

NPRDC's funding for the end of FY90 was \$29 million. Distribution, sponsor, and appropriation of funds are shown in Figures 3 and 4.



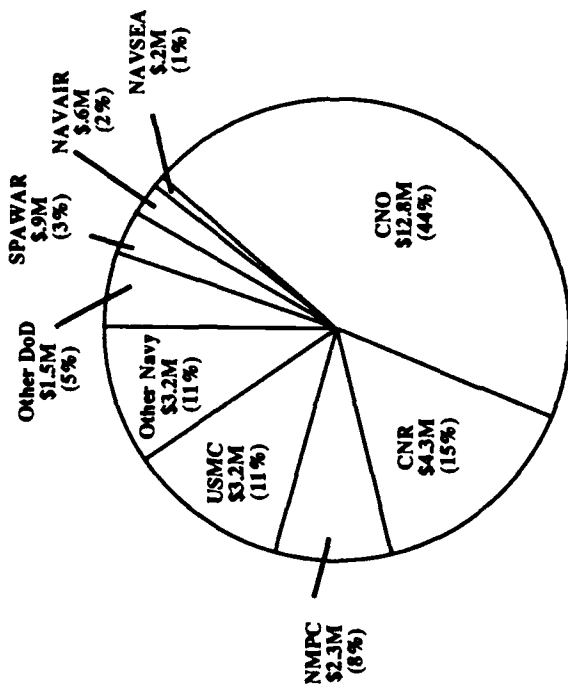
**Figure 3. Distribution of funds.
(as of 30 September 1990).**

Funding

NPRDC operates under the research, development, testing, and evaluation (RDT&E) Resources Management System. Under this system, the final fiscal responsibility resides with the Commanding Officer and certain financial responsibilities are delegated to cost center managers. The reporting procedures associated with the Resources Management System provide financial information for both internal management and higher authority.

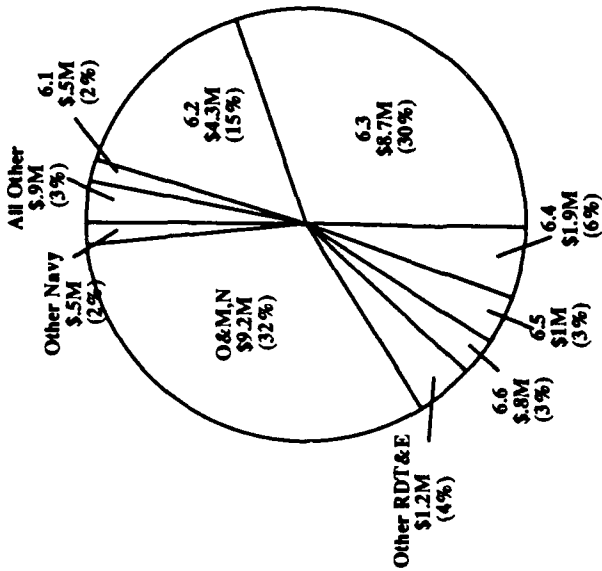
The principal mission sponsor and prime "customer" for Center RDT&E products is the Deputy Chief of Naval Operations for Manpower, Personnel, and Training (OP-01)/Naval Military Personnel Command. Significant sponsorship also comes from the Chief of Naval Research, the Marine Corps, and other Navy and DoD organizations including the Systems Commands. The majority of RDT&E that the Center conducts is supported by directly funded projects. A small portion of the funds are independent research (IR) and independent exploratory development (IED). In addition, a substantial portion of research, development, and analysis consists of "reimbursables," specific problem solving efforts requested by, and supported with funding from other organizations.

Sponsor



- DoD
- SPAWAR
- NAVVAIR
- NAVSEA
- CNO
- CNR
- NMPC
- USMC
- Department of Defense
- Space and Naval Warfare System Command
- Naval Air Systems Command
- Naval Sea Systems Command
- Chief of Naval Operations
- Chief of Naval Research
- Naval Military Personnel Command
- U.S. Marine Corps

Appropriation



- 6.1
- 6.2
- 6.3
- 6.4
- 6.5
- 6.6
- O&M
- RDT&E
- Research
- Exploratory Development
- Advanced Development
- Engineering Development
- Management and Support
- Operational Systems Development
- Operation and Maintenance
- Research, Development, Test, and Evaluation

Figure 4. Funding by sponsor and appropriation (as of 30 September 1990).

Personnel

Because R&D programs at NPRDC are mission-oriented, it is essential that the research force be multidisciplinary so that early consideration may be given to alternative approaches in research endeavors. The Center's staff is creatively diverse and equipped to meet this prerequisite.

As of 30 September 1990, the staff numbered 23 military and 277 civilian personnel. Of the civilians, 189 are professional and technical personnel representing a variety of disciplines. Of the professional and technical staff, 89 percent hold advanced degrees. The military staff consists of line officers and senior enlisted personnel. The military personnel offer extensive fleet and subject-matter expertise that helps ensure the operational relevance of NPRDC's R&D endeavors. This broad personnel base allows NPRDC to maintain a highly effective, multidisciplinary team approach to its R&D.

Facilities

NPRDC is located on Point Loma in San Diego, California, with support offices in Washington, DC. The Center occupies 17 buildings under a host-tenant arrangement with the Naval Ocean Systems Center. In addition to office space for research and support personnel, the following research facilities are housed at the Center:

- **Training Research Computing Facility (TRCF)** provides general Unix-based computing services and access to the Defense Data Network for Center research and support staff. The facility is supported by the Training Technology Department and provides computational and electronic mail support for research in areas of artificial intelligence, computer-assisted instruction, cognitive science, testing, and training. The TRCF equipment suite includes two Digital Equipment Corporation VAX-11/780 computers and numerous peripherals.
- **Manpower and Personnel Computing Facility (MAPCOM)** provides general purpose IBM-based computing services for Center researchers and administrative operations. The facility is supported by the Manpower Systems Department. It is specially equipped to serve psychologists, economists, mathematicians, and computer scientists whose research requires the organization and analysis of large data files, the development of large-scale mathematical models, the design of information delivery systems, and general-purpose scientific computing. The MAPCOM features an IBM 4381/23, multiple tape drives, and over 25G in disk storage.
- **Systems Simulation Facility** serves cognitive and organizational psychologists who are concerned with the measurement of human performance, neuroscience applications in personnel readiness assessment, and motivation of people in organizations. It includes equipment of biopsychological and psychophysiological measurement.

The above facilities are supplemented by two mobile laboratories that provide R&D support at sites away from the Center, and by a large inventory of computer equipment supporting specific projects.

RESEARCH AND DEVELOPMENT PROGRAM

The R&D program at NPRDC addresses five functional areas: Manpower, Personnel, Testing Systems, Education and Training, and Organizational Systems. Within these five functional areas, we have 19 product lines, each of which has one or more projects.

Manpower

Develops new computer-based systems and methods for allocating manpower resources, developing personnel inventories, and distributing/assigning those inventories to improve military readiness and control costs.

- **Navy Force Management**--Designs/develops large-scale decision-support systems for managing the flow of personnel (accession, retention, promotion) to attain desired skill inventories within constraints of cost and feasibility, allocating manpower resources, and developing and executing manpower appropriations.
- **USMC Force Management**--Designs/develops systems to justify and effectively execute USMC manpower plans and policies.
- **Assignment Systems**--Designs/develops systems for improving the assignment of officer and enlisted personnel to jobs (billets) based on cost constraints, fleet requirements, individual preferences, and a wide variety of assignment policies.
- **Information Support**--Investigates and evaluates Information Resource Management (IRM) technologies for MPT applications by exploring new tools and techniques, developing prototype systems, and distributing promising technologies to functional application development efforts.

Personnel

Develops systems and procedures for recruiting, selecting, classifying, and utilizing officer, enlisted, and civilian personnel to improve performance and retention. Serves as the Chief of Naval Operations' primary personnel survey resource to coordinate and conduct attitude surveys in the Navy and Marine Corps and to develop new survey technology.

- **Recruiting Systems**--Develops market analyses, supply projections, resource management models and systems to support accession policy and recruiting objectives.
- **Women and Minorities**--Investigates issues associated with a racial-, ethnic-, and gender-mixed active duty and civilian force.
- **Officer Career Management**--Develops and applies new technology to match officer attributes and billeting requirements in a changing environment.
- **Personnel Surveys**--Develops systems to improve the quality and timeliness of personnel survey data.

- **Training Resources Systems**--Develops computer systems to assess readiness against alternative training resource scenarios and to discover regularities in Navy MPT data bases using expert system technology.

Testing Systems

Develops and evaluates systems for personnel selection and classification testing, performance measurement, and person-job matching. Serves as the lead DoD laboratory for the development of a Computerized Adaptive Testing version of the Armed Services Vocational Aptitude Battery (CAT-ASVAB) and the Adaptability Screening Profile Program. Manages and performs R&D and scientific support for these and other programs including the Navy portion of the Joint-service Job Performance Measurement Program and the operational paper-and-pencil ASVAB.

- **Printed Testing**--Establishes and monitors Navy enlistment qualification and school eligibility standards for the ASVAB. Develops biographical information instruments for use in enlisted personnel screening.
- **Computerized Testing**--Develops CAT-ASVAB as a replacement for the paper-and-pencil version of the battery. Includes development of new computerized ability tests which can be used to augment the battery.
- **Personnel Classification**--Develops job performance measures for use in validating selection and classification tests. Develops mathematical modeling procedures to assist in establishing recruit quality requirements and person-job matching techniques.

Education and Training

Develops training technologies to enhance personnel readiness. Employs existing and emerging technologies in the development and application of training systems to alleviate Navy training problems and to improve the Navy's operational readiness.

- **Operational Training**--Develops training programs to support specific operational weapons systems including enhancements to existing programs and application of emerging training technologies to these systems.
- **Schoolhouse Training**--Develops content specific instructional materials and processes designed to enhance the effectiveness and lessen the cost of the delivery of formal Navy schoolhouse instruction.
- **Curriculum Acquisition, Development, and Revision**--Develops, tests, and evaluates systems designed to support the development of curriculum materials. These include automated systems designed to support instructor delivered training materials and systems for computer delivered training materials.
- **Neurosciences**--Develops and evaluates technologies to assess and enhance performance and training procedures using neuroscience, neural network, and behavioral approaches. Performs research and development for improved assessment of human capabilities, including sensory and cognitive processing, skill development and retention, real-time monitoring, and on-job performance prediction.

Organizational Systems

Develops and evaluates performance enhancement and control systems for improving the effectiveness, quality, and productivity of Navy personnel and organizations.

- **Management Control Systems**--Performs needs analyses for the purpose of diagnosing problems with existing systems used for cost, quality, and production control and improvement. Determines appropriate enhancements to such systems and provides models for system development. This frequently includes design, development, and evaluation of management training for quality and productivity improvement.
- **Incentive Management Systems**--Determines feasibility, design, development, test, and evaluation of incentives in Navy organizations. This includes monetary and nonmonetary applications for individual, group, and organization. Nonmonetary types include performance measurement, feedback, goal setting, time off, suggestion systems, employee involvement, and job redesign.
- **Organizational Systems Evaluation**--Includes diagnostics of organizations, their designs, functions, and "climate" or culture. Also includes evaluation of programs that have aimed to change these factors.

Other research efforts include developing and testing innovative methods to design, administer, and evaluate management and professional training. In addition, job aids are developed and tested to determine their effects on workload accomplishment.

Fleet Liaison Office

In addition, NPRDC has set up a Fleet Liaison Office (FLO) to maintain liaison with Fleet Commands, Type Commands, Systems Commands, CNO Agencies, and R&D Centers in matters related to NPRDC's mission areas, and serves as the Center's focal point for investigating and responding to requests for technical assistance. It monitors on a continuing basis operational problems, requirements, and priorities to determine RDT&E implications, provides on-site consultative services to operational commands and performs quick-reaction studies or special projects as needed and facilitates the implementation of the Center's R&D products. Also, the FLO serves as the Center's agent for the Navy Science Assistance Program.

Publications and Presentations¹

Technical Reports

- Semb, G. B., Ellis, J. A., & Montague, W. E. (October 1990). *Long term memory for knowledge taught in school* (NPRDC-TR-91-1). (AD-A228 791)
- Simpson, H., & Pugh H. L. (September 1990). *A computer-based instructional support network: Design, development, and evaluation* (NPRDC-TR-90-6). (AD-A227 922)
- Simpson, H., Pugh H. L., & Parchman, S. W. (September 1990). *A two-point videoteletraining system: Design, development, and evaluation* (NPRDC-TR-90-5). (AD-A226 734)
- Sorenson, S. W. (December 1990). *Developing and implementing the NEC "C" school planner (CSCHOOL)* (NPRDC-TR-91-3).

Administrative Publications

- Dalton, R. G. (February 1990). *Bibliography of reports and journal articles approved for public release: FY89* (NPRDC-AP-90-4).
- Dalton, R. G., & Scheifers, C. C. (December 1990). *Bibliography of reports and journal articles approved for public release: FY90* (NPRDC-AP-91-6).
- Montague, W. A., & Scheifers, C. C. (March 1990). *Research and exploratory development progress: FY89 annual report* (NPRDC-AP-90-6). (AD-A222 690)
- Roth, P. G., & Murphy D. J. (November 1990). *Office of civilian personnel management survey of Navy civilian attitudes December 1989: Management report* (NPRDC-AP-91-2). (AD-A229 911)
- Stout, A. V., & Scheifers, C. C. (September 1990). *Command history for 1989* (NPRDC-AP-90-10).
- Thomas, E. (September 1990). *Equal employment opportunity employee handbook* (NPRDC-AP-90-11).

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- Aunins, A. E., Sander, K. E., Giannetto, P. W., & Wilson, S. J. (March 1990). *Navy recruiter survey: Content analysis of free response data* (NPRDC-TN-90-14).
- Backaitis, N., & Rosen, H. H. (Coeditors) (May 1990). *Readings on managing organizational quality* (NPRDC-TN-90-19).
- Backaitis, N., & Rosen, H. H. (June 1990). *Managing for organizational quality--theory and implementation: An annotated bibliography* (NPRDC-TN-90-25). (AD-A225 040)

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- Baker, H. G. (July 1990). *Navy recruiting comprehensive stress management program: I. The stress of recruiting duty* (NPRDC-TN-90-31). (AD-A225 429)
- Bruce, D. M. (May 1990). *Evaluating quality of life programs: Summary of a literature review* (NPRDC-TN-90-20). (AD-A221 989)
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- Burch, R. L., Abrahams, N. M., & Edwards, J. E. (December 1990) *Development and evaluation of a high school rating conversion table for NROTC applicants* (NPRDC-TN-91-3).
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- Cory, C. H. (August 1990). *Validity of the GRIP and ASVAB test batteries for job performance of sonar technician (surface) personnel* (NPRDC-TN-90-32).
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- Humphrey, D., Sirevaag, E., Kramer, A. F., & Mecklinger, A. (April 1990). *Real-time measurement of mental workload using psychophysiological measures* (NPRDC-TN-90-18). (AD-A221 462)
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- Lee, M-Y. (August 1990). *Allocating promotions to year of service (YOS) cells in a Marine Corps inventory projection model* (NPRDC-TN-90-26). (AD-A225 314)
- McDaniel, D. M., & Doherty, L. M. (February 1990). *Total quality management case study in a Navy headquarters organization* (NPRDC-TN-90-10).
- Rybowiak, A., Flanningam, M. R., & Tarker, B. (September 1990). *The effectiveness of transportable acquisition management lessons* (NPRDC-TN-90-33).
- Simpson, H. (June 1990). *The evolution of communication technology: Implications for remote-site training in the Navy* (NPRDC-TN-90-22). (AD-A223 159)
- Tarker, B., Rybowiak, A., Flanningam, M. R., & Hulton V. (May 1990). *Lessons learned in converting residential courseware to transportable courseware* (NPRDC-TN-90-21).
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- Trejo, L. J., Lewis, G. W., & Blankenship, M. H. (January 1990). *Brain activity during tactical decision-making: III. Relationships between probe-evoked potentials, simulation performance and on-job performance* (NPRDC-TN-90-9) (AD-A217 207)
- Van de Wetering, B., & Thomason, B. (April 1990). *The MS-DOS device services interface* (NPRDC-TN-90-15). (AD-A223 902)
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- Semb, G. B., Ellis, J. A., Montague, W. E., & Wulfeck, W. H. (1990). Self-paced instruction: Perceptions, pitfalls, and potentials. In T. Shlechter (Ed.), *Problems and promises in computer-based training*. Norwood, NJ: Ablex.

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- Alderton, D. L. (April 1990). *Revisiting a cognitive framework for test design: Applications for a computerized perceptual speed test*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.
- Baker, H. G. (August 1990). *A program to manage stress in Navy recruiting*. Paper presented at the 98th annual convention of American Psychological Association, Boston, MA.
- Booth-Kewley, S., Rosenfeld, P., & Edwards, J. E. (November 1990). *Turnover among Navy civilian Hispanic and Anglo blue-collar workers*. Paper presented at the 32nd conference of the Military Testing Association, Orange Beach, AL.
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- Burch, R. L. Sheposh, J. P. & Morrison, R. F. (August 1990). *Surface warfare officer retention: A test of the Steers and Mowday model*. Paper presented at the annual meeting of the Academy of Management, San Francisco, CA.
- Carlyle, J. J., & Hayashida, C. A. (June 1990). *Leaders for workforce 2000: Innovative strategies for meeting selection needs*. Paper presented at the annual conference of the International Personnel Management Association Assessment Council, San Diego, CA.
- Christinaz, D. (March 1990). *Instructional development in outstanding U.S. corporations*. Paper presented the National Society for Performance and Instruction, Toronto, Canada.
- Christinaz, D. (November 1990). *Using role limiting tools to automatically develop computer tutors*. Paper presented at the meeting of the Association for the Development of Computer-based Instructional System, San Diego, CA.

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- Culbertson, A. L., Cooper, B., & White, M. (August 1990). *A guide and prototype gain sharing plan for Navy organizations*. Paper presented at the annual meeting of the Academy of Management, San Francisco, CA.
- DasGupta, S., Hohenberger, M., Trejo, L., & Kaylaini, T. (April 1990). *Effect of data compression of ERP signals preprocessed by FWT algorithm upon a neural network classifier*. Paper presented at the 23rd annual Simulation Symposium, Nashville, TN.
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- Huntley, D. G. (April 1990). *Neural nets: An approach to the forecasting of time series*. Paper presented at the conference of the Advanced Computing for the Social Sciences, Williamsburg, VA.
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- McDaniel, D. M., & Doherty, L. M. (April 1990). *Total quality management in a Navy headquarters organization: A case study*. Paper presented at the meeting of the Western Psychological Association, Los Angeles, CA.
- Montague, W. E. (April 1990). *Discussion of hypermedia systems and instructional goals*. Symposium discussant at the annual meeting of the American Educational Research Association, Boston, MA.
- Nebeker, D. M. (August 1990). *Productivity gain sharing in the Navy*. Symposium discussant at the annual meeting of the Academy of Management, San Francisco, CA.
- Nebeker, D. M., & Riedel, J. A. (April 1990). *Effects of goal attainment on the valence of job outcomes*. Paper presented as part of a symposium entitled "Exploring the Relationships Between Goal Setting and Valence," at the 5th annual conference of the Society for Industrial and Organization Psychology, Miami, FL.
- Niblett, T., Van Holf, A., & Thompson, T. (October 1990). *A documentation environment for EPANS*. Paper presented at the meeting of the Operations Research Society of America and the Institute of Management Sciences, Philadelphia, PA.
- Parchman, S. (November 1990). *Navy basis electricity theory training: Past, present, and future*. Paper presented at the 32nd conference of the Military Testing Association, Orange Beach, AL.
- Quenette, M. A., Ward, D. G., Trent, T., & Laabs, G. J. (June 1990). *Biographical data: The past predicts the future*. Paper presented at the annual conference of the International Personnel Management Association Assessment Council, San Diego, CA.
- Rowe, M., & Chipman, M. (June 1990). *Recruiter information delivery system*. Paper presented at the conference of the Joint Market Analysis and Research Committee, San Diego, CA.
- Sands, W. A. (April 1990). *Computerized aptitude testing for enlisted personnel selection and classification in the U.S. Department of Defense*. Paper presented at the meeting of the North Atlantic Treaty Organization Research Study Group, Washington, DC.
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- Suarez, J. G. (September 1990). *Effects on non-government employees of participating in work sponsored recreational activities.* Paper presented at the 38th conference and exhibit of the National Employee Services Recreation Association, San Diego, CA.
- Simpson, J. B. (June 1990). *Improved scoring for personnel tests.* Paper presented at the annual conference of the International Personnel Management Association Assessment Council, San Diego, CA.
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- Thomas, P. J. (August 1990). *Planned and unplanned pregnancy among Navy women.* Paper presented at the 98th annual convention of the American Psychological Association, Boston, MA.
- Thomas, M. D. (August 1990). *Navy enlisted women and pregnancy: Lifestyle issues.* Paper presented at the 98th annual convention of the American Psychological Association, Boston, MA.

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- Trent, T., Quenette, M. A., & Laabs, G. J. (August 1990). *An alternative to high school diploma for military enlistment qualification*. Paper presented at the 98th annual convention of the American Psychological Association, Boston, MA.
- Trent, T., Quenette, M. A., & Laabs, G., (November 1990). *Implementation of the adaptability screening profile (ASP)*. Paper presented at the 32nd conference of the Military Testing Association, Orange Beach, AL.
- Trejo, L. J. (April 1990). *The P300 component of the auditory event-related potential: Test-retest and interlaboratory reliability*. Paper presented at the meeting of the Office of Navy Technology Biopsychometrics Advisory, Pensacola, FL.
- Trejo, L. J. (June 1990). *Analysis of human brain electrical activity: Towards real-time prediction of human performance*. Paper presented at the annual conference of the International Personnel Management Association Assessment Council, San Diego, CA.
- VanMatre, N. (September 1990). *Instructional technology assessment in the Navy*. Paper presented at the meeting of the Center for Educational Evaluation at UCLA, Los Angeles, CA.
- Vicino, F. L. (April 1990) *Computerized adaptive testing-is it for everyone?* Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.
- Wang, Z., & Kennington, J. (May 1990). *A shortest augmenting path algorithm for the semi-assignment problem*. Paper presented at the meeting of the Operations Research Society of America and the Institute of Management Sciences, Las Vegas, NV.
- Wetzel, C. D. (June 1990). *Computer-based instruction technology*. Paper presented at the annual conference of the International Personnel Management Association Assessment Council, San Diego, CA.
- Whitehill, B. V., & McDonald, B. A. (April 1990). *Improving cognitive skills by motivational enhancements in a computer-based schoolhouse training program*. Paper presented at the annual meeting of the American Educational Research Association, Boston, MA.
- Yau, M. C., & Krass, I. A. (October 1990). *A decision criteria interpreter for a large-scale personnel assignment system*. Paper presented at the meeting of the Operations Research Society of America and the Institute of Management Sciences, Philadelphia, PA.

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