
PROJECT SUMMARIES

THE IMPACT OF DEPLOYMENT ON ARMY RESERVISTS

Bob Barrios-Choplin, Research Assistant Professor

George Thomas, Professor

Department of Systems Management

Sponsor: U.S. Army Center for Land Warfare

OBJECTIVE: To determine the impact of deployment on Army Reservists, including their retention, military and civilian careers, finances, families, and schooling. Suggestions for improving the deployment process were sought.

SUMMARY: On-site interviews with fifty reservists were conducted in four units. These members had deployed to Germany or Hungary for nine months, in support of the Bosnia mission. They were still participating in drills. Another fifty reservists who deployed and stopped participating in drills are being interviewed for comparison.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Reserves, Deployment, Turnover

AMERICA'S ALL-VOLUNTEER FORCE

Mark J. Eitelberg, Associate Professor

Department of Systems Management

Sponsor: Office of the Assistant Secretary of Defense

OBJECTIVE: The goal of this project is to chronicle the manpower policies and programs that succeeded—or failed—in sustaining the All-Volunteer Force (AVF) and to provide a “lessons learned” evaluation that will assist in setting a course for the future.

SUMMARY: Information has been gathered from three major sources: published research, Congressional reports and Department of Defense documents; data maintained by the Defense Manpower Data Center; and interviews with current and former officials in the Department of Defense who were directly involved in designing or executing manpower policies during the AVF era (1973-present). Contractor support was obtained for three phases of the research: a study of the evolution of the AVF; an assessment of the “effectiveness” of the military since the end of the draft; and an evaluation of the military’s experience in Operation Desert Shield/Desert Storm, a defining moment of the AVF. Students at the Naval Postgraduate School have also made important contributions—in the form of project papers and theses—to the research effort. This study is a multi-year effort that looks at ten major areas, including recruiting, compensation, population participation, changing missions, and other topics. Several related publications have been reported in research summaries from previous years.

The principal investigator is preparing a book-length manuscript, tentatively titled *America's All-Volunteer Force*. Several individuals have contributed to the effort. Additional publications, theses, and related papers can be found in the research summaries for 1994-1997.

PUBLICATION:

Eitelberg, Mark J., “Women and Minorities in the Military: Research Trends and Future Directions,” *Proceedings of DEOMI, 1997 EO/EEO Research Symposium*, Patrick AFB, FL, April 1998.

CONFERENCE PRESENTATION:

Eitelberg, Mark J., “The All-Volunteer Force and Society,” Seminar on Transition to an All-Volunteer Force, sponsored jointly by the Council on Foreign and Defense Policy (Russia), the *Independent Military Review* (Russia), and the Center for Civil-Military Relations (Naval Postgraduate School), Moscow, Russia, January 1998.

PROJECT SUMMARIES

THESES DIRECTED:

Davids, K.B., "Retention of Junior Naval Special Warfare Officers," Master's Thesis, Naval Postgraduate School, September 1998.

Dobel, T.A., "Study of Gender Integration in Classroom Training at the Navy Recruit Training Command," Master's Thesis, Naval Postgraduate School, September 1998.

Dooley, S.G., "Female Recruits and the United States Marine Corps: The Transformation Process," Master's Thesis, Naval Postgraduate School, March 1998.

Gelhausen, Volker, "The Effects of Economic, Military, Political, and Social Factors on the Successful Implementation of an All-Volunteer Armed Force," Master's Thesis, Naval Postgraduate School, March 1998.

Johnson, R.S., "Civilian Husbands in the Military Family: Current Issues and Future Concerns," Master's Thesis, Naval Postgraduate School, March 1998.

Pompey, W.G., "The Recruitment of African-American High School Students in the Naval Reserve Officers Training Corps," Master's Thesis, Naval Postgraduate School, September 1998.

Tierney, K.E., "Study of Navy and Marine Corps Prison Inmates Affiliated with Gangs and Extremist Groups: Trends and Issues for Enlistment Screening," Master's Thesis, Naval Postgraduate School, March 1998.

Young, Yeol Oh, "An Analysis of Factors that Influence Enlistment Decisions in the U.S. Army," Master's Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Military Manpower, Personnel, Recruitment, Population Representation, Compensation, Force Management, Roles/Missions, Attrition, Military Accession Policy

STUDY OF SOCIO-ECONOMIC STATUS AND PERSONNEL PERFORMANCE IN THE MILITARY

**Mark J. Eitelberg, Associate Professor
Department of Systems Management
Sponsor: Defense Manpower Data Center**

OBJECTIVE: The primary objective of this study is to analyze the relationship between a service member's socioeconomic status and his or her performance in the military. The study uses the results of the Department of Defense Survey of Recruit Socioeconomic Backgrounds (or "SES Survey") that has been administered annually since 1989.

SUMMARY: A special database was created for this study. The database merges results from the SES survey with the Department of Defense Military Entrance Processing Command Cohort files and various performance-related data provided by the separate Services. The SES Survey sample includes approximately 106,000 recruits (from entry years 1989 through 1995). Initial data analysis compared the demographic composition of survey respondents, by year of entry, with the corresponding base population. This analysis indicated that the sample populations were reasonably representative of all recruits, with the exception of their gender composition. Data analysis will proceed in developing statistical models to examine the relationship between socioeconomic status and selected indicators of performance. The socioeconomic status variable in the statistical models will be based on two indices contained in the SES Survey database. Quantitative analyses may additionally explore the use of alternative socioeconomic measures developed from information contained in the

PROJECT SUMMARIES

survey database. Four students in the Manpower Systems Analysis Curriculum, Department of Systems Management, conducted thesis research directly related to the research project. This is a multi-year effort.

PUBLICATION:

Eitelberg, M.J., "Minorities and Women in the Officer Pipeline," Washington, DC: Office of the Under Secretary of Defense for Personnel and Readiness Report, 1998 (Contributions).

THESES DIRECTED:

Booth, S.J. and Schmiegel, K.M., "Socioeconomic Status and Performance in the U.S. Army and U.S. Marine Corps," Master's Thesis, Naval Postgraduate School, March 1998.

Harper, R.L. and Heldreth, C.R., "Socioeconomic Status and Performance in the U.S. Navy and U.S. Air Force," Master's Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Recruit Backgrounds, All-Volunteer Force, Equal Opportunity, Population Representation, Performance Measures, First-Term Attrition

STUDY OF RECRUIT ATTRITION FROM THE DELAYED ENTRY PROGRAM

Mark J. Eitelberg, Associate Professor

Department of Systems Management

Sponsor: Office of the Assistant Secretary of Defense

OBJECTIVE: To identify factors associated with the attrition of recruits from the Delayed Entry Program (DEP); and to identify and evaluate possible approaches that would reduce this attrition.

SUMMARY: A study was designed and undertaken to determine trends in DEP attrition over time, the characteristics of DEP losses, and the reasons for DEP attrition. The initial focus of the study was on dropouts from the DEP who later entered active duty—including their background characteristics, the reasons for their attrition from the DEP, and the nature of their behavior and performance while on active duty. A special database for the study was created with the assistance of the Defense Manpower Data Center in Monterey. This database was also used by students in the Manpower Systems Analysis (MSA) Curriculum for a course project, and by two MSA students who are studying DEP attrition in related theses (scheduled for completion in March 1999).

PUBLICATION:

Flyer, Eli S. and McCormick, David C., "Recruit Attrition From the Delayed Entry Program (DEP) and Reentry to Active Duty," Draft Technical Report, Washington, DC: Office of the Assistant Secretary of Defense (Force Management Policy), December 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Delayed Entry Program (DEP), Recruit Attrition, Selection and Classification, Enlistment Screening, Military Manpower Policy

PROJECT SUMMARIES

SYSTEMS MANAGEMENT RESEARCH SUPPORT FOR THE RAPID ACQUISITION OF MANUFACTURED PARTS (RAMP) PROGRAM

Kenneth J. Euske, Professor
Alan W. McMasters, Professor Emeritus
Department of Systems Management
Sponsor: Naval Supply Systems Command

OBJECTIVE: A continuing project to investigate how advanced manufacturing technology can be applied to processes in the Department of Defense.

SUMMARY: The efforts expended on this project have been to provide the Rapid Acquisition of Manufactured Parts (RAMP) Program Office information would help them identify how advanced manufacturing technology could be best used by the Department of Defense.

DoD KEY TECHNOLOGY AREA: Other (Acquisition)

KEYWORDS: Acquisition Management, Computer Integrated Manufacturing, Advanced Manufacturing Technology

PRODUCTIVITY ENHANCING CONCEPTS

Kenneth J. Euske, Professor
Department of Systems Management
Sponsor: Naval Air Warfare Center-Aircraft Division

OBJECTIVE: The objective of this project is to provide research support to the Naval Air Warfare Center-Aircraft Division in identifying means to enhance productivity.

SUMMARY: The work executed on this project focuses on productivity enhancement in direct and support activities at the Naval Air Warfare Center, Aircraft Division.

THESES DIRECTED:

Haupt, Jeffrey S., "RDT&E Laboratory Capacity Utilization and Productivity Measurement Methods for Financial Decision-Making Within DoN," Master's Thesis, Naval Postgraduate School, June 1998.

Ross, Clifton G., "Incentive Measures for Navy Working Capital Fund Civilian Employees at Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORD: Productivity

NAVAL POSTGRADUATE SCHOOL RESEARCH SUPPORT FOR NAVAL INVENTORY CONTROL POINT (NAVICP) - EVALUATION OF AUTOMATED NON-STANDARD REQUISITIONING SYSTEM (ANSRS)

Jane Feitler, Visiting Assistant Professor
Department of Systems Management
Sponsor: Naval Inventory Control Point

OBJECTIVE: To evaluate and determine the cost/benefits of implementing the Automated Non-Standard Requisitioning System (ANSRS) use for Navy procurement activities.

PROJECT SUMMARIES

SUMMARY: NAVICP's new automated procurement software, ANSRS, was developed to meet several objectives. They are to: 1) to shift from a paper-oriented procurement system to a paperless one; 2) emphasizing ED/ED usage, to capture demand information regarding fleet purchases so that forecasting for future acquisitions would be made with relevant, accurate data; 3) to make current procurement processes more efficacious; and 4) to make the Navy's procurement process from entry of purchase demand, through order fulfillment, replenishment, and restocking, one of total asset visibility. This research was conducted over the course of several months and included on-site interviews, a review of ANSRS publications and software, e-mail, and telephone communications, and via interface with implementation teams. Sites visited include NAVICP Mechanicsburg, FISC-San Diego, FISC-Honolulu, and NAS-Barbers Point.

Overall, the ANSRS software package is an excellent one and it is highly recommend that it be implemented across the Fleet. At this time, there are only a few sites that have ANSRS installed. It is suggested that, prior to more implementations, the Windows version be completed, tested and verified to be user-friendly and "bug-free." Once a solid track record has been developed with current systems, ANSRS usage should have no problems being accepted and used by Navy personnel.

CONFERENCE PRESENTATION:

Feitler, Jane N., "Even the Navy Can Go Paperless: Using ANSRS, the Automated Non-Standard Requisitioning System," Production and Operations Management Society (POMS) Annual Meeting, Santa Fe, NM, March 1998.

DoD KEY TECHNOLOGY AREA: Computer and Software

KEYWORDS: Automation, Non-Standard, Requisitioning, Procurement

MAINTENANCE DEPLOYMENT COMMODITY PLANNING TOOL

Kevin R. Gue, Assistant Professor

Department of Systems Management

Sponsor: Naval Facilities Engineering Services Center

OBJECTIVE: To assist in the development of software tools through research in database design, requirements determination, and sparing model development.

SUMMARY: The design of a decision support system was supported to build maintenance and supply blocks for deploying Marine Corps units. The data and information system requirements were investigated for the tool, and an algorithm was written to determine the spare parts inventory. Briefly, the Marine Corps was found severely lacking in areas of data quality and collection capability. These were described in a thesis by Craig Penrose entitled, "Data Requirements for Availability Based Sparing in the U.S. Marine Corps." The sparing algorithm was delivered to the lead contractor for the system, who integrated it into the tool. Unfortunately, funding from the Marine Corps to our sponsor was lost, so this project will not move past the prototype stage, at least this year.

THESES DIRECTED:

Keech, Janet L., "Use of Availability Based Sparing in Support of Deploying U.S. Marine Corps Units," Master's Thesis, Naval Postgraduate School, December 1998.

Penrose, Craig B., "Data Requirements for Availability-Based Sparing in the U.S. Marine Corps," Master's Thesis, Naval Postgraduate School, September 1998.

OTHER: The sponsor computer code entitled, "BlockBuilder," written in the Java programming language was delivered.

DoD KEY TECHNOLOGY AREA: Manufacturing Science and Technology

KEYWORDS: Inventory, Readiness-Based Sparing, Data Requirements

PROJECT SUMMARIES

DISTRIBUTION PROBLEMS IN SEA-BASED LOGISTICS

Kevin R. Gue, Assistant Professor
Department of Systems Management
Sponsor: Office of Naval Research

OBJECTIVE: To develop methodologies for positioning and distributing items in spatially dynamic and uncertain distribution environments, with particular application to Sea-Based Logistics.

SUMMARY: This reports the first of two years of research on this project. This year the concentration was on gathering data and information from academic and military sources related to the subjects of sea-based logistics and combat service support. An interesting problem was identified related to the positioning of Marine support units to support a set of maneuvering combat units and the flow of materials necessary to facilitate that maneuvering. A mixed integer program was formulated to solve the problem and this year plans are to construct decomposition methods to solve it. The model will be tested with data gathered this year, and hopefully the model can be used in upcoming war games.

DoD KEY TECHNOLOGY AREA: Other (Logistics and Transportation)

KEYWORDS: Distribution, Logistics, Dynamic Facility Location, Multi-Commodity Flows

LAYOUT METHODS FOR CROSSDOCKS IN THE RETAIL AND TRUCKING INDUSTRIES

Kevin R. Gue, Assistant Professor
Department of Systems Management
Sponsor: Unfunded

OBJECTIVE: To design and test algorithms to assign trailers to doors in crossdocks to minimize labor cost and congestion.

SUMMARY: As part of a continuing thread of research, a new algorithm was designed and tested that establishes freight flows in a terminal to minimize labor costs and congestion. The models were tested at a freight terminal operated by Viking Freight System in Stockton, CA, and a productivity improvement of more than 11% was documented. Results of that test are reported in a recently submitted paper.

PUBLICATION:

Gue, K.R., "Balancing Labor Cost and Congestion in an LTL Freight Terminal," submitted to *Operations Research*.

CONFERENCE PRESENTATION:

Gue, K.R., "Layouts for Multiple Operations in a Freight Terminal," Annual Congress of the American Society of Mechanical Engineers, Anaheim, CA, 14 November 1998.

DoD KEY TECHNOLOGY AREA: Other (Logistics and Transportation)

KEYWORDS: Facility Layout, Less-Than-Truckload Motor Carriers, Crossdocks

PROJECT SUMMARIES

CHAIR OF MANAGEMENT ANALYSIS

Reuben T. Harris, Professor

Department of Systems Management

Sponsors: U.S. Transportation Command, Chief of Naval Personnel, and Naval Supply Systems Command

OBJECTIVE: The Admiral Jeremy Michael Boorda Management and Analysis (M&A) Chair will provide support and oversight of the Manpower Systems Analysis curricula as well as the Transportation Logistics Management, Transportation Management, and Acquisition and Contract Management curricula at the Naval Postgraduate School. The Chair will represent the Chief of Naval Personnel (CNP/N1) as well as the Chief of the Naval Supply Corps (NAVSUP), and Director, Plans and Policy, U.S. Transportation command (USTRANSCOM/TCJ5). The function of the chair is to establish a strong and ongoing liaison between curricula sponsors and NPS faculty and students.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower, Personnel, Training

ECONOMETRIC PROJECTION OF ARMY PERSONNEL STRENGTH

Gregory G. Hildebrandt, Visiting Associate Professor

Department of Systems Management

Sponsor: Office of the Deputy Chief of Staff, Personnel, U.S. Army

OBJECTIVE: This study, initiated 1 October 1997, supports the achievement of the required end strength using the Army's Strength Management System. Retention rates for various categories of officers and enlisted personnel are being projected using econometric forecasting models.

SUMMARY: During October 1998, representatives of HQDA (ODCSPER) were briefed on the econometric forecasting model developed for C-group Army personnel, which includes male three and four-year term high school graduates with AFQT scores of at least the 50th percentile. Two Multivariate Autoregressive Integrated Moving Average (MARIMA) forecasting models, which possess attractive statistical properties, were presented. One model was developed for members with three year terms; the other for members with four year terms. Military pay was shown to have a positive effect on the military retention of both groups. The approach to be taken to analyze other C-groups was discussed, and the extended work is underway. A single econometric time-series cross-section model is being developed in which each C-group would be identified as a special case. The results will be compared with those obtained using exponential smoothing methods. A Naval Postgraduate School thesis on Army retention is also being supervised.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Army's Strength Management System, Econometric Forecasting Model, Retention Rate

TECHNOLOGY-TO-TACTICS FOR SENSOR TO SHOOTER NETWORKS:

A STRATEGY-TO-TASK APPROACH

Gregory G. Hildebrandt, Visiting Associate Professor

Department of Systems Management

Col Raymond E. Franck, Jr., USAF

United States Air Force Academy

Sponsor: Naval Postgraduate School-Institute for Joint Warfare Analysis

OBJECTIVE: This analysis builds on previous investigations of the Joint Reconnaissance-Strike Complex (JRUK). The relationship between a JRUK and its constituent sensor-to-shooter networks that have been developed to deal with specified

PROJECT SUMMARIES

Operational Situations (OPSITS) are being considered. The strategy-to-task framework is also being used to understand how the technology of a sensor-to-shooter network is related to the tactical concept.

SUMMARY: The Operational Maneuver from the Sea and Precision Strike OPSITS are being investigated. They are using the Unified Joint Task List (UJTL) and the Navy Tactical Task List (NTTL) is being used to develop Mission-Operations-Tasks-Performance Standards templates for the two OPSITS. Current plans are to employ multi-attribute utility function analysis as an aid to determining the relative value of the Operations and Tasks.

DoD KEY TECHNOLOGY AREAS: Sensors, Other (Operations)

KEYWORDS: Reconnaissance-Strike Complex, Sensor-to-Shooter Operational Situation, Unified Joint Task List, Navy Tactical Task List, Strategy-to-Task

LAND-BASED SEARCH AND RESCUE (SAR) OUTSOURCING

Gregory G. Hildebrandt, Visiting Associate Professor

Department of Systems Management

Sponsor: Chief of Naval Operations (N88)

OBJECTIVE: The purpose of the study is to analyze the disparate requirements of land-based NAVAL SAR HELOs, consolidate those aircraft requirements and conduct an analysis of the gross benefits to the government of outsourcing this mission.

SUMMARY: The project was initiated on 1 October 1997. An NPS thesis on land-based SAR outsourcing was completed. The missions, functions, and activity-structure of personnel assigned to SAR stations have been completed for both officer and enlisted personnel. The Analytical Hierarchy method was employed to assess the gross benefits to the Navy of conducting land-based SAR in house versus outsourcing these activities. The extent to which there are greater gross benefits conducting these activities in house is computed.

THESIS DIRECTED:

Brodin, Robert K., "Comparative Analysis of Benefits Received From Naval Air Station Search and Rescue (SAR) Mission," Master's Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREAS: Air Vehicles, Other (Outsourcing)

KEYWORDS: Search and Rescue (SAR), Best Value to Government

NAVY PRACTICAL COMPTROLLERSHIP COURSE (PCC)

CDR Ted A. Hleba, Lecturer

Department of Systems Management

Sponsors: Navy Financial Management Center and Space and Naval Warfare Systems Command

OBJECTIVE: To educate civilian and military personnel in DoD financial management fundamentals within the Department of Defense and the Department of the Navy.

SUMMARY: Research and instruction were conducted in the following areas: (1) Introduction to Financial Management; (2) DoD and DoN Financial Management Organizations; (3) Planning, Programming, and Budgeting System (PPBS); (4) Appropriations and Appropriation Law; (5) Budget Formulation and Execution; (6) Funding Sources and Mechanisms; (7) Unit Costing; (8) Working Capital Funds; (9) Accounting in DoD; (10) Property Accounting in DoD; (11) Support Agreements and Reimbursable Funding; and (12) the Prompt Payment Act.

PROJECT SUMMARIES

DoD KEY TECHNOLOGY AREA: Other (Financial Management)

KEYWORDS: Financial Management, Resource Management, PPBS, Fiscal, Budget, Budget Formulation, Budget Execution

LEADERSHIP AND RETENTION IN TROOP PROGRAM UNITS (TPU), PHASE IV: VALIDATION AND IMPLEMENTATION OF LEADERSHIP FEEDBACK

Erik Jansen, Visiting Associate Professor

Kenneth W. Thomas, Professor

Department of Systems Management

Sponsor: U.S. Army Reserve Command

OBJECTIVE: When originally funded by the previous Chief, Army Reserve (CAR), the objective of this project was to increase readiness and retention in company-level units (TPUs) in the U.S. Army Reserve by providing a reliable means of measuring unit commanders' leadership behaviors and key unit conditions.

SUMMARY: This FY98 project followed three previous phases of a research program to identify, measure, and improve key leadership behaviors by TPU commanders that influenced unit readiness and retention. Phase I had reviewed existing research to construct a conceptual model of how leadership behaviors influence unit retention and readiness via their impact on unit conditions. Phase II had conducted extensive interviews in TPUs to identify specific leadership behaviors and unit conditions seen by unit members to impact retention and readiness. The findings of this phase were widely disseminated within the USAR and resulted in a number of policy changes. Phase III had developed preliminary questionnaires to measure the leadership behaviors and unit conditions. Phase IV would have used those questionnaires to validate and extend the previous findings by quantitatively determining which leadership behaviors had the strongest impact upon retention and readiness measures. It would also have resulted in validated measures of leadership and unit conditions which could be used to mentor TPU commanders on their leadership, to more accurately predict system-wide retention in the USAR, and to suggest policy changes to enhance leadership. During FY98, however, there was a change of CAR and the project was ended. At present, another community is negotiating with the researchers to implement the study in FY99.

CONFERENCE PRESENTATION:

Thomas, K.W., Jansen, E., Thornburg, B.J., and Barrios-Choplin, J.R., "What Makes Research Impactful? Traditional and Non-Traditional Lessons from a High-Impact Project," 39th Annual Western Academy of Management Conference, Portland, OR, 26-28 March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Leadership Measurement, Retention, Readiness, Troop Program Unit, Army Reserve

DEVELOPMENT OF PERFORMANCE OUTPUT AND COST MEASUREMENT METRICS

Lawrence R. Jones, Professor

Reuben Harris, Professor

Department of Systems Management

Sponsor: Space and Naval Warfare Systems Command

OBJECTIVE: The purpose of this research is to conduct analysis on how to measure the performance and outputs of the SPAWAR Systems Command and to relate these variables to cost.

PROJECT SUMMARIES

SUMMARY: The project provided analytical assistance to the Office of the Comptroller, SPAWAR, in responding to the necessity for reviewing and assessing options for improving command measurement of costs and outputs.

CONFERENCE PRESENTATION:

Jones, L.R. and Harris, R., "International Budgeting and Financial Management," Association for Budgeting and Financial Management Annual Conference, Washington, DC, November 1998.

DoD KEY TECHNOLOGY AREA: Other (Cost Analysis)

KEYWORDS: Performance Measurement, Cost Analysis

**ANALYSIS OF BUDGET REDUCTION, COST-AVOIDANCE AND
FINANCIAL MANAGEMENT INITIATIVES IN COMNAVAIRPAC**

Lawrence R. Jones, Professor

Jerry L. McCaffery, Professor

Department of Systems Management

Sponsors: COMNAVAIRPAC and Naval Postgraduate School

OBJECTIVE: To provide assistance to the Office of the Comptroller, AIRPAC, in analysis of initiatives for improving command management and management control, cost-reduction and cost avoidance in the Flight Hour Program (FHP), and in accommodating budget reduction.

SUMMARY: The project provided analytical assistance to the Office of the Comptroller, AIRPAC, in responding to the necessity for reviewing and assessing options for improving command management and management control, achieving cost-reduction and avoidance in the Flight Hour Program (FHP) and accommodating budget reduction in the period FY 1998 and beyond.

PUBLICATIONS:

Jones, L.R. and Thompson, F., "Responsibility Budgeting and Accounting," *Budget Theory*, A. Kahn, (ed.), New York: State University of New York Press, 1998.

Jones, L.R. and McCaffery, J.L., "Federal Government Financial Management," *Handbook of Government Budgeting*, R. Meyers, (ed.), San Francisco: Jossey Bass Publishers, 1998.

Jones, L.R. and Thompson, F., "Strategic Management in the Public Sector," *Azienda Publica*, 12/2 1998.

McCaffery, J.L., "Features of the Budgetary Process," *Handbook of Government Budgeting*, R. Meyers, (ed.), San Francisco: Jossey Bass Publishers, 1998.

CONFERENCE PRESENTATIONS:

Jones, L.R. and McCaffery, J.L., "Reinvention in the Department of Defense," Academy of Management Annual Conference, San Diego, CA, August 1998.

Jones, L.R. and McCaffery, J.L., "Does New Public Management Compromise Democracy?" Association for Public Policy and Management Annual Conference, New York, NY, October 1998.

Jones, L.R. and McCaffery, J.L., "International Budgeting and Financial Management," Association for Budgeting and Financial Management Annual Conference, Washington, DC, November 1998.

PROJECT SUMMARIES

THESES DIRECTED:

Gardiner, E., "An Empirical Analysis of the Navy Flight Hours Program," Master's Thesis, Naval Postgraduate School, December 1998.

Grogan, P., "Contracting Out and Outsourcing in the United States Marine Corps," Master's Thesis, Naval Postgraduate School, December 1998.

Keating, P. and Paulk, D., "An Analysis of Navy Flight Hours Program Underfunding," Master's Thesis, Naval Postgraduate School, December 1998.

Wright, A., "Comptrollership in the United States Marine Corps," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREA: Other (Resource Management, Financial Management)

KEYWORDS: Resource Management, Reinvention, Financial Management

INVESTIGATION OF DOD INVENTORY MANAGEMENT

Keebom Kang, Associate Professor

Department of Systems Management

Sponsor: Deputy Under Secretary of Defense for Logistics and Naval Postgraduate School

OBJECTIVE: Improving DoD readiness via logistics cycle time and inventory reduction.

SUMMARY: The relationship between inventory levels and repair processes is troublesome in the military because it crosses physical, organizational, and financial barriers. Inventory managers strive to consolidate and minimize stocks of piece-parts to free up resources for other priorities. They also seek to get quick turnaround on repairable components in order to minimize pipeline inventory. Depot managers have different concerns, such as reducing costs by increasing worker efficiency and machine utilization. This leads to a natural conflict; inventory managers want short production runs to minimize pipeline inventory, while depot managers want long production lines to minimize repair costs. Simulation models were developed for analysis of aviation logistics repair cycle time and inventory management. The simulation models were used to quantify tradeoffs inherent in the inventory and repair processes.

PUBLICATIONS:

Kang, K., "DoD Inventory Management Cultural Changes and Training in Commercial Practices," Naval Postgraduate School Technical Report, NPS-SM-98-002, March 1998.

Kang, K., Gue, K.R., and Eaton, D.R., "Cycle Time Reduction for Naval Aviation Depots," *Proceedings of the 1998 Winter Simulation Conference*, D.J. Medeiros, et al., (eds.), pp. 907-912, December 1998.

CONFERENCE PRESENTATIONS:

Kang, K., Eaton, D.R., Mooney, K.F., and Sanchez, G., "Cycle Time Reduction to Improve Naval Aviation Readiness Using Modeling and Simulation," 66th Military Operations Research Society Symposium, Monterey, CA, 23-25 June 1998.

Kang, K., Gue, K.R., and Eaton, D.R., "Cycle Time Reduction for Naval Aviation Depots," 1998 Winter Simulation Conference, Washington, D.C., 13-16 December 1998.

PROJECT SUMMARIES

THESIS DIRECTED:

Stearns, D.E., "Logistics Simulation Metamodel for F404-GE-400 Engine Maintenance," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREAS: Modeling and Simulation, Other (Logistics)

KEYWORDS: Readiness, Logistics, Inventory Management, Cultural Change

SYSTEMS ACQUISITION MANAGEMENT (CURRICULUM 816) SUPPORT

David V. Lamm, Associate Professor

LTC Greg Walls, USA, Lecturer

Department of Systems Management

**Sponsors: Director, Acquisition Career Management and Assistant Secretary of the Army
(Research, Development and Acquisition)**

OBJECTIVE: The Director, Acquisition Career Management (DACM) and the Military Deputy to the Assistant Secretary of the Army (Research, Development and Acquisition) is the sponsor of the Systems Acquisition Management (816) Curriculum at NPS. This funding supports Army thesis students (military and civilian) in the 816 Curriculum, an acquisition library and laboratory, faculty travel for developmental purposes, and the academic associate.

SUMMARY: The objective of the 816 Curriculum is to provide selected officers and Government civilians an advanced education in the fundamental concepts, methodologies, and analytical techniques necessary for the management of major defense systems. The curriculum is open to both U.S. students and officers/civilians of Allied Nations. The curriculum is six quarters for Army officers/civilians and seven quarters for all others. A key feature of this program is its relationship with the requirements of the Defense Acquisition Workforce Improvement Act (DAWIA) which statutorily requires mandatory training in various career fields. The most significant of these requirements is the Advanced Program Management Course (PMT302) sponsored by the Defense Systems Management College (DSMC). The NPS 816 Curriculum is the only program in the country which satisfies the equivalency requirements for PMT 302, a Level III (Executive Level) Program Management course. The 816 Curriculum also satisfies requirements through Level III in the Acquisition Logistics career field and Level II (Intermediate Level) in the Systems Planning, Research, Development and Engineering (SPRDE); Manufacturing, Production and Quality Assurance (PQM); Test and Evaluation (T&E); and Software Acquisition Management (SAM) career fields. Efforts are underway to obtain equivalency in the Business, Cost Estimating, Financial Management career field.

THESES DIRECTED:

Bandy, Leigh M., "A Case Study of the Contract Closeout Process at Defense Contract Management Command Lockheed Martin Missiles and Space," Master's Thesis, Naval Postgraduate School, June 1998.

Carter, Charles A., "The Family of Medium Tactical Vehicles: Analysis of a Non-Developmental Item Acquisition Program," Master's Thesis, Naval Postgraduate School, June 1998.

DiMarco, Andrew J., "The Simulation-Based Acquisition Research Laboratory," Master's Thesis, Naval Postgraduate School, December 1998.

Ford, William M., "DoD Depot-Level Maintenance: Factors to Consider in Public/Private Competition," Master's Thesis, Naval Postgraduate School, December 1998.

Hirschman, Keith A., "The Cost and Benefits of Maintaining the Buy American Act," Master's Thesis, Naval Postgraduate School, June 1998.

PROJECT SUMMARIES

Romero, James, "Software Metrics: A Case Analysis of the U.S. Army Bradley Fighting Vehicle," Master's Thesis, Naval Postgraduate School, June 1998.

Shade, David M., "Optimizing the Privatization of Military Family Housing," Master's Thesis, Naval Postgraduate School, December 1998.

Slade, William C., "Other Transactions for Prototypes as Used in the Commercial Operations and Support Savings Initiative 1997: A Contractors' Perspective," Master's Thesis, Naval Postgraduate School, June 1998.

Visconti, Albert, "Dual-Use Technology Policy," Master's Thesis, Naval Postgraduate School, December 1998.

Wegler, Michael K., "Comparison of the Acquisition Systems of the Federal Republic of Germany and the United States Governments," Master's Thesis, Naval Postgraduate School, December 1998.

Whitworth, Robin E., "A Technical Analysis of the Requirements Document: DOD 5000 Series," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREA: Other (Systems Acquisition)

KEYWORDS: Acquisition, Program Management, Test and Evaluation, Systems Engineering, Contracting, Logistics, Manufacturing/Production, Quality Assurance, Software Acquisition, Reliability and Maintainability

A READINESS-BASED SPARING REPLENISHMENT MODEL FOR REPAIRABLE ITEMS

Alan W. McMasters, Professor Emeritus

Department of Systems Management

Sponsor: Naval Supply Systems Command

OBJECTIVE: A continuing project to develop a wholesale level inventory model for the Navy's Inventory Control Point to use to replenish and repair its inventories of repairable items; the objective function of this model should be related to readiness.

SUMMARY: Recent simulation analyses have resulted in an approximate wholesale level inventory model for describing the inventory position and the net inventory at any instant of time as a function of the order quantity, repair quantity, and the maximum level of the inventory position under the assumption of Poisson and Normally distributed demands for a given repairable item. This past year simulation analyses of the safety stock were conducted in an attempt to derive an approximate formula to describe safety stock. Statistical analysis of the results provided at two approximate formulas which gave excellent statistical fits to the simulation results. A search was also begun for approximate formulas for the optimal order and repair quantities for any specified maximum inventory position. The optimality measure is the minimum expected annual costs to manage the inventory of an item.

DoD KEY TECHNOLOGY AREA: Modeling and Simulation

KEYWORDS: Inventory Management, Navy Repairable Items, Inventory Model

PROJECT SUMMARIES

MANPOWER SYSTEMS ANALYSIS (MSA) FACULTY RESEARCH TO SUPPORT N-1 (CHIEF OF NAVAL PERSONNEL)

Stephen L. Mehay, Professor
Department of Systems Management
Sponsor: Chief of Naval Personnel

OBJECTIVE: The project provided umbrella funding within which individual projects were proposed and carried out by individual researchers. Professor Mehay coordinated the overall project and facilitated interactions between MSA faculty, thesis students, and N1/Bupers.

SUMMARY: The efforts under this umbrella project addressed a variety of manpower problems. Although the major focus was on officer issues, some enlisted topics were also addressed. For example, on the enlisted differences in measures of job performance for blacks and whites were analyzed, and adjusted these differences were adjusted for AFQT scores. On the officer side, one task investigated differences between minority and majority surface warfare officers in their career experiences. A second, analyzed the career experiences—performance on fitness reports, retention, and promotion—of submarine officers. The study attempted to isolate the impact of the officer’s pre-commissioning academic performance with a view to evaluating the selection methods of the submarine force. A related study analyzed the impact of college selectivity, college grades, and college major on performance of URL and staff communities. Finally, a third study analyzed the impact of compensation on Navy physician retention. This study tracked the changes in the civilian health care system toward managed care and identified the impacts on physician pay by specialty. It then analyzed whether Navy physician pay has reflected the changes in relative compensation that have occurred in the civilian sector.

THESES DIRECTED:

Johnson, A. David, “The Influence of Demographics and Navy Career Experiences on the Performance of Junior Surface Naval Officers,” Master’s Thesis, Naval Postgraduate School, March 1998.

Lane, Michael and Melody, Brendan, “The Impact of Pay on Navy Physician Retention in a Health Care Reform Environment,” Master’s Thesis, Naval Postgraduate School, March 1998.

O’Connell, Richard, “College Selectivity and the Performance of Junior Navy Officers,” Master’s Thesis, Naval Postgraduate School, March 1998.

Roick, James A., “A Statistical Analysis of Black-White Performance Differentials of U.S. Military Personnel,” Master’s Thesis, Naval Postgraduate School, September 1998.

Woelper, Eric P., “The Impact of Academic Background on Submariner Performance, Retention, and Promotion,” Master’s Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Officer Retention, Officer Promotion, Officer Performance, Enlisted Performance

MINORITY REPRESENTATION AND CAREER PROGRESSION IN NAVY ENLISTED RATINGS

Stephen L. Mehay, Professor
Department of Systems Management
Sponsor: Navy Personnel Research and Development Center

OBJECTIVE: The goal of this project was to analyze the representation of minorities across Navy enlisted ratings and specialties, and to determine whether the distribution is disproportionate to minority representation in the total end strength.

PROJECT SUMMARIES

When this was observed, the research attempted to determine whether any disproportionate distribution is due to entry requirements, specifically Armed Services Vocational Aptitude Battery (ASVAB) test scores, that may limit opportunities in some rating, or whether it is due to the preferences of minority and women sailors, or to other factors.

SUMMARY: Accession quality goals, which determine recruiter mission requirements, are set in the aggregate. They are typically measured in terms of the number and proportion of Upper Mental Group (UMG) recruits and high school diploma graduates. A-school training seats are set at the rating and Navy Enlisted Code (NEC) level, and may include scores on other components of the ASVAB. One can estimate an Armed Forces Qualification Test (AFQT)-equivalent for the entry score requirements, but this will be an approximation that is, at best, correct only on average. This project aims to improve the recruit quality requirements determination process. It examined the effect that rating-specific requirements have on the supply and demand of recruits of various characteristics, and the role that recruit preferences play vs. requirements in the distribution of quality levels and minorities/women across skills.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: AFQT, Requirements Determination, Minority Representation, Navy Ratings

ANALYSIS OF LIMITED DUTY BOARD AND CENTRAL PHYSICAL EVALUATION BOARD PROCESSES

Stephen L. Mehay, Professor
Department of Systems Management
Sponsor: Naval Bureau of Personnel

OBJECTIVE: The goal of this project was to analyze the efficiency of the processes for screening and managing the review of personnel who are non-deployable and unavailable for assignment. In particular, the project analyzed the flow of reviews via the limited duty board and central physical evaluation board.

SUMMARY: The screening and management of sailors with medical problems that render them non-deployable or non-assignable is a key manpower and readiness issue. The Navy manages service members unable to perform their duties due to medical reasons utilizing both the Temporary Limited Duty Assignment process (TLD) and the Disability Evaluation System (DES). This research analyzed the system for process inefficiencies to assess the impact on the amount of time that a member spends in a transient or limited duty status. An extensive summary of findings were provided with recommendations for streamlining the processes.

THESIS DIRECTED:

Keenan, M. Debra and Wilkins, Gail, "Disability Evaluation System and Temporary Limited Duty Assignment Process: A Qualitative Review," Master's Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Temporary Limited Duty Assignment, Disability Evaluation System

PROJECT SUMMARIES

RECRUIT STATION LOCATION PROJECT

Stephen L. Mehay, Professor

Kevin Gue, Assistant Professor

Michael Cook, Assistant Professor

Department of Systems Management

Sponsor: Office of Undersecretary of Defense, Personnel and Readiness

OBJECTIVE: The goal of this project is to build an optimization model that assists OSD and the Joint Recruiting Facilities Committee to locate military recruiting stations in specific geographic locations.

SUMMARY: This was the second of three years for this project. The concentration was on developing a number of models this year, all of which will be tied into a decision support system in the coming year as a deliverable to our sponsor. Two econometric models were refined and tested: one that estimates recruit production in a zip code based on its characteristics, and one that estimates the cost of a station in that zip code. These models are part of the optimization model that chooses the best locations for stations and allocates recruiters among them. For the optimization, a linear mixed integer program was developed and tested, which was solved with the Generalized Algebraic Modeling System (GAMS) modeling package. In the coming year these models will be integrated into a graphical interface using the MAPINFO GIS package and Visual Basic.

CONFERENCE PRESENTATIONS:

Cook, Michael, Mehay, Stephen, and Hogan, Paul, "Enlistment Supply at the Local Level," Western Economic Association, Lake Tahoe, CA, June 1998.

Gue, Kevin R., "Locating Facilities that Compete and Cooperate," Conference of the Institute for Operations Research and the Management Sciences, Seattle, WA, 2 November 1998.

THESIS DIRECTED:

Hostetler, David, "Navy Enlistment Supply Models at the Zip Code Level," Master's Thesis, Naval Postgraduate School, March 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Recruiting, Recruit Stations, Recruiter Assignment, Location Models

EXTERNAL ACQUISITION RESEARCH PROGRAM INITIATION

Mark Nissen, Assistant Professor

Department of Systems Management

Sponsor: Defense Acquisition University

OBJECTIVE: To plan and initiate an external acquisition research program for the Defense Acquisition University (DAU).

SUMMARY: The DAU is required by law to ensure acquisition research is accomplished. After working for several years to plan and initiate an acquisition research program, the DAU enlisted support from the Naval Postgraduate School. This research project examined the feasibility and potential of launching a program of acquisition research targeted toward universities and research institutions external to the Department of Defense. The project resulted in development of plans, processes and organizations required for the successful launch of the DAU External Acquisition Research Program in FY99. The DAU acquisition research program is described in detail via the Web at <http://web.nps.navy.mil/~menissen/earp/earp.html>.

PROJECT SUMMARIES

PUBLICATIONS:

Nissen, M.E., Snider, K.F., and Lamm, D.V., "Managing Radical Change in Acquisition," *Acquisition Review Quarterly* 5:2, 1998.

Nissen, M.E., Snider, K.F., and Lamm, D.V., (eds.), *Acquisition Review Quarterly*, Special Issue on Managing Radical Change, 5:2, 1998.

CONFERENCE PRESENTATION:

Nissen, M.E., "Acquisition Research: Questions and Ideas," 11th Annual National Contract Management Association Academic Conference for Contract Management Educators, Monterey, CA, October 1998.

DoD KEY TECHNOLOGY AREA: Other (Acquisition Policy)

KEYWORDS: Acquisition, Research

KNOWLEDGE-BASED RE-ENGINEERING: INTELLIGENT TOOLS DEVELOPMENT AND TESTING

Mark Nissen, Assistant Professor
Department of Systems Management
Sponsor: Naval Postgraduate School

OBJECTIVE: To develop and test "intelligent" re-engineering tools (e.g., knowledge systems) to diagnose pathologies and faults in enterprise processes and to generate innovative redesign alternatives.

SUMMARY: A study was conducted to develop a knowledge system to provide intelligent re-engineering support through the Web on a real-time basis. A proof-of-concept system called KOPeR was successfully demonstrated in the laboratory and in the field to redesign key Navy procurement processes. KOPeR is also being used in the classroom to demonstrate Web-based intelligent systems design, and it has supported several thesis projects oriented toward process innovation. This intelligent redesign tool is now employed as a platform for research on process innovation and is made available to Defense organizations interested in re-engineering.

PUBLICATIONS:

Nissen, M.E., "Redesigning Re-Engineering Through Measurement-Driven Inference," *MIS Quarterly*, 22:4, 1998.

Nissen, M.E., "A Configuration-Contingent Enterprise Redesign Model," *Process Engineering: Advancing the State of the Art*, T.R. Gullledge, D.J. Elzinga, and C.Y. Lee, (eds.), Boston: Kluwer, accepted for publication, 1998.

Nissen, M.E. and Karty, A., "The Standard Procurement Systems and Beyond," *Innovative Contracting: Practical Approaches*, A. Lee, and C. Fisher, (eds.), Vienna, VA: National Contract Management Association, accepted for publication, 1998.

CONFERENCE PRESENTATION:

Nissen, M.E. and Mehra, A., "Redesigning Software Procurement Through Intelligent Agents," 1998 American Association for Artificial Intelligence Conference, Workshop on Knowledge Management and Business Process Re-Engineering, Madison, WI, July 1998.

PROJECT SUMMARIES

THESES DIRECTED:

Bazemore, W., "Facilitating Software Process Improvement Implementation Efforts: A Case Study of Financial Systems Activity, Kansas City," Master's Thesis, Naval Postgraduate School, September 1998.

Hudson, J., "Software Agents and the Defense Information Infrastructure: Re-engineering the Acquisition Process," Master's Thesis, Naval Postgraduate School, September 1998.

McCarthy, T., "Innovating the Standard Procurement Process," Master's Thesis, Naval Postgraduate School, December 1998.

McGuire, P., Palan, A., and White, D., "Process Innovation: Analysis and Redesign of the California Army National Guard State Emergency Mobilization Process," Master's Thesis, Naval Postgraduate School, September 1998.

Schutter, G., "Process Innovation Through Alpha Contracting: An Analysis of Department of Defense Service Contracts," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREAS: Computing and Software, Manpower, Personnel, and Training, Modeling and Simulation

KEYWORDS: Acquisition, Artificial Intelligence, Re-Engineering, Systems Development

ACQUISITION MANAGEMENT DISTANCE LEARNING PROGRAM

Walter E. Owen, Lecturer

Department of Systems Management

Sponsors: Marine Corps Systems Command-Quantico, National Reconnaissance Organization-Chantilly, Naval Surface Warfare Center-Dalghren, Naval Undersea Warfare Center- Newport, Program Executive Officer Ground Combat Support Systems, U.S. Army Tank and Automotive Command

OBJECTIVE: To deliver distance learning graduate education courses using video teleconferencing (VTC) to numerous sponsors as a cost-effective alternative to meet acquisition workforce education and training requirements under the Defense Acquisition Workforce Improvement Act (DAWIA). These courses are offered and delivered as part of on-going acquisition management reimbursable instruction projects.

SUMMARY: Course materials were developed and tailored for the distance learning environment.

DoD KEY TECHNOLOGY AREAS: Manpower, Personnel, and Training. Other (Weapon Systems Acquisition, Program Management)

KEYWORDS: Acquisition, Program Management, Requirements Generation, Science and Technology, Business Financial Management, Contracting, Systems Engineering, Logistics Support, Test and Evaluation, Software Development

INTERORGANIZATIONAL COLLABORATION

Nancy C. Roberts, Professor

Department of Systems Management

Sponsor: United Nations Staff College

OBJECTIVE: A continuing project that brings together donors, non-governmental organizations, and UN personnel from field and headquarter agencies for the purpose of planning relief and development efforts in crisis countries.

PROJECT SUMMARIES

SUMMARY: The United Nations has sponsored an experimental project that brings together the major stakeholders who are intervening in a country in crisis for the purposes of joint planning. Afghanistan was the first country for which such planning was undertaken; it occurred in Islamabad, Pakistan with 86 representatives from various stakeholder groups in attendance. The purpose of the five-day planning session was to develop a strategic framework for relief and recovery efforts in Afghanistan. The strategic framework developed by field representatives was then sent to stakeholder counterparts at headquarters so a joint policy on Afghanistan could be issued. The lessons learned from this experiment in interorganizational collaboration are expected to inform planning efforts in other crisis countries.

CONFERENCE PRESENTATIONS:

Roberts, N.C., "Stakeholder Collaboration and Planning in Crisis Countries," Academy of Management Conference, San Diego, CA, August 1998.

Roberts, N.C., "Peace Matters Most," Academy of Management Conference, San Diego, CA, August 1998.

OTHER:

Roberts, N.C., "Dialogue and Transformation," *International Journal of Organization Theory and Behavior*, (Guest Editor), forthcoming.

DoD KEY TECHNOLOGY AREAS: Command, Control, and Communications, Other (Planning)

KEYWORDS: Planning, Collaboration, Crisis

STRATEGIC PLANNING FOR NAVAL CONSTRUCTION BATTALION CENTER

Nancy Roberts, Professor

Department of Systems Management

Sponsor: Naval Construction Battalion Center

OBJECTIVE: To conduct strategic planning exercises with Naval Construction Battalion Center.

SUMMARY: Naval Construction Battalion Center is in a period of dramatic change. It has requested help in its strategic planning exercises. The Bryson model of strategic planning will be utilized to guide its planning efforts. The Center has also requested that, in addition to site visits, reviews and assistance take advantage of VTC as much as possible to minimize costs.

PUBLICATIONS:

Roberts, N.C., "Radical Change by Entrepreneurial Design," *Acquisition Research Quarterly*, Vol. 5, No. 2, pp. 107-127, 1998.

Roberts, N.C., "Innovation by Legislative, Judicial, and Management Design: Three Arenas of Public Entrepreneurship," *Reinventing Public Administration: The Management of Reform*, J. George Frederickson and J.M. Johnston, (eds.), University of Alabama Press, in press.

Roberts, N.C., "Organizational Configurations: Four Approaches to Public Management," *Advancing Public Management*, Jeff Brudney, Larry O'Toole, and Hal Rainey, (eds.), Washington, DC, Georgetown University Press, in press.

PROJECT SUMMARIES

Roberts, N.C. and Menker, J., "Strategic Management in the Federal Government: Necessary and Sufficient Conditions" *Handbook of Strategic Management, 2nd ed.*, J. Rabin, G.J. Miller, W.B. Hildreth, (eds.) New York, Marcel Dekker, in press.

Roberts, N.C., "Public Entrepreneurship as Social Creativity," *The Social Dimensions of Creativity*, Vol. 3, A.A. Montuori and R.E. Purser, (eds.), Hampton Press, in press.

CONFERENCE PRESENTATION:

Roberts, N.C., "Strategic Planning and the Results Act: Lacking a Good Fit with the Political Context," Academy of Management, San Diego, CA, August 1998.

THESES DIRECTED:

Bergeman, Russell, "Relocation Analysis of Marine Corps Air Station Futenma," Master's Thesis, Naval Postgraduate School, December 1998.

Calhoun, Todd R., "Evaluating Security Assistance Programs: Performance Evaluation and the Expanded International Military Education and Training (E-IMET) Program," Master's Thesis, Naval Postgraduate School, December 1998.

Weiss, Carl, "How Innovative is Naval Supply Systems Command?" Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREA: Other (Planning, Evaluation, Management)

KEYWORDS: Strategic Planning, Strategic Management, Performance Evaluation and Measurement

FINANCIAL REPORTING AND ANALYSIS RESEARCH FOR THE DEPARTMENT OF DEFENSE SECURITY RESEARCH CENTER

Joseph G. San Miguel, Professor

Department of Systems Management

Sponsor: Department of Defense Security Research Center

OBJECTIVE: The objective of this research is to provide financial reporting and analysis expertise to national security research projects of the Security Research Center of the Department of Defense. Various financial measures such as personal net worth and net income can be used as determinants of potential security risk from federal employees. In addition there are financial implications of security policies and programs of the Defense Investigative Service.

SUMMARY: Numerous initiatives are underway to evaluate the quality of financial and nonfinancial information for purposes of deterring or detecting security threats. Prior investigation and research has established that financial incentives and payments are generally the primary motives for acts of spying by U.S. citizens. The well-known spy cases involving Aldrich Ames and John Walker are examples. This project will consider the use of financial information for use as predictors of potential security risks and the need for security investigations. Financial information includes unexplained increases or decreases in an individual's net worth. The various sources of net worth such as earned income, inheritance, or sale of personal assets as well as the uses of net worth for investments and asset acquisitions are variables that must be considered.

THESIS DIRECTED:

Conrad, K.M., "A Security Study of U.S. Government Employees' Net Worth in Relation to Their Household Gross Realized Income and Pertinent Personal Characteristics," Master's Thesis, Naval Postgraduate School, December 1998.

PROJECT SUMMARIES

DoD KEY TECHNOLOGY AREA: Other (National Security)

KEYWORDS: Financial Analysis, Cost Analysis, Cost Estimation

**STRATEGIC PROFIT ANALYSIS AND ENTERPRISE RESOURCE PLANNING IN
DEPARTMENT OF DEFENSE SECURITY RESEARCH CENTER**

Joseph G. San Miguel, Professor

Department of Systems Management

Sponsor: Department of Defense Security Research Center

OBJECTIVE: To what extent are strategic profit analysis and cost management systems integrated into Enterprise Resource Planning systems? Are cost management systems stand alone data systems? To what extent are cost management systems used for cost reduction, make/buy, outsourcing, business expansion, pricing, product and customer profitability analyses?

SUMMARY: For survival and growth in the global marketplace, a firm must effectively allocate its strategic resources, which include human, physical, and financial assets, across business operations and processes. Its strategy must be supported by management systems that assist the planning and control of operations and processes. Today information technology supports these information systems. In recent years enterprise resource planning (ERP) systems have been used as a means to comprehensively link firm-wide operations and processes. The majority of the thousand largest firms in the U.S. have either implemented or in the process of implementing enterprise resource planning systems. Because of the millions of investment dollars involved, executive management are keenly aware of ERP and its promised benefits. Today, ERP vendors and IT consultants are also targeting middle-level firms with annual sales less that \$1 billion. The question is how effective are these significant investments in assisting executive management in achieving corporate objectives.

PUBLICATIONS:

San Miguel, J.G., "Abrams Company," *Management Control Systems*, Robert N. Anthony and V. Govindarajan, (eds.), Irwin/McGraw-Hill, 1998.

San Miguel, J.G., "Grand Jean Company," *Management Control Systems*, Robert N. Anthony and V. Govindarajan, (eds.), Irwin/McGraw-Hill, 1998.

San Miguel, J.G., "Emerson Electric Company," *Management Control Systems*, Robert N. Anthony and V. Govindarajan, (eds.), Irwin/McGraw-Hill, 1998.

THESIS DIRECTED:

Nickless, S.R., "Analysis of the Operating Costs for Light Armored Vehicles in the United States Marine Corps," Master's Thesis, Naval Postgraduate School, December 1998.

DoD KEY TECHNOLOGY AREA: Other (Cost Management, Information Technology)

KEYWORDS: Financial Analysis, Cost Analysis, Cost Estimation

PROJECT SUMMARIES

A BLUEPRINT FOR RESEARCH IN DEFENSE ACQUISITION

Keith F. Snider, Assistant Professor
Department of Systems Management
Sponsor: Naval Postgraduate School

OBJECTIVES: To accomplish foundational work to make possible the development of a sensible and coherent body of research in the emerging field of defense acquisition, and to propose a strategy and framework for Department of Defense investments in the conduct of acquisition research.

SUMMARY: This Research Initiation Project began in 1996. During 1998, the final year of the project, the work involved continued study of likely “high-payoff” approaches to enhance the quality of research in defense acquisition. Areas of focus included: (1) analysis of the degree to which the field of public administration has served in the past and may serve in the future to guide academic efforts in acquisition; (2) efforts to engage scholars outside the defense community to consider applying their research efforts in the acquisition context; and (3) analysis regarding the potential for a program of case study research to contribute to scholarship in acquisition. A project to develop such a case study program was approved and funded by the Office of the Assistant Secretary of the Army (Research, Development and Acquisition) for FY99. As a result of this project, other efforts remain in progress at the beginning of CY99: (1) five students performing acquisition case studies as their thesis research projects to be completed in CY99; (2) development, with TRADOC Analysis Center-Monterey, of an internet-based research center for the Army acquisition community; and (3) papers for various CY99 public administration and acquisition conferences and journals.

PUBLICATIONS:

Snider, K.F., “Issues in Teaching Defense Acquisition as Public Administration,” *Proceedings of the Twenty-First National Conference on Teaching Public Administration*, Colorado Springs, CO, March 1998.

Nissen, M.E., Snider, K.F., and Lamm, D.V., “Managing Radical Change in Acquisition,” *Acquisition Review Quarterly*, Vol. 5, No. 3, Spring 1998.

CONFERENCE PRESENTATION:

Snider, K.F., “Issues in Teaching Defense Acquisition as Public Administration,” Twenty-First National Conference on Teaching Public Administration, Colorado Springs, CO, March 1998.

DoD KEY TECHNOLOGY AREA: Other (Systems Acquisition Management)

KEYWORDS: Acquisition, Acquisition Research, Acquisition Reform

BUREAU OF MEDICINE AND SURGERY (BuMED) EXECUTIVE MANAGEMENT EDUCATION (EME) DELIVERABLES AND RESEARCH AND DEVELOPMENT FOR FISCAL YEAR 1999

Gail Fann Thomas, Associate Professor
Reuben T. Harris, Professor
Department of Systems Management
Sponsor: Bureau of Medicine and Surgery (BuMED)

OBJECTIVE: This project is a continuation of a program that began in FY92. This year’s purpose was to deliver scheduled EME program modules, incorporate DoD tri-service behavioral objectives into existing modules, develop case studies to tailor module application to specific MTF issues, and facilitate program coordination.

PROJECT SUMMARIES

SUMMARY: EME curriculum has been developed, overall program elements have been defined, and initial module delivery was accomplished FY92-95. FY96-99 included the delivery of a 3-week executive program of designated EME modules for prospective XOs and COs as delineated in BuMED's plan of work. FY99 will include program coordination, delivery of two or more 3-week programs for prospective BuMED XOs and COs, development of new materials to tailor module application to specific Military Treatment Facility (MTF) issues, development of course materials to support conversion to internet delivery, and research to guide and evaluate distance learning delivery of EME modules.

DoD KEY TECHNOLOGY AREA: Other (Military Healthcare Executive Education)

KEYWORDS: Executive Education, Healthcare

MARINE CORPS RETENTION STUDY

George Thomas, Professor

Alice Crawford, Senior Lecturer

Daniel Dolk, Professor

Susan Hocevar, Assistant Professor

Department of Systems Management

Sponsor: U.S. Marine Corps

OBJECTIVE: To implement longitudinal electronic retention and exit surveys and analyze first year results.

SUMMARY: This project was initiated in October 1998. Headquarters Marine Corps (HQMC) has recently developed retention and exit surveys. The surveys are intended to provide a data analytic basis for managing officer and enlisted retention. The retention survey process is intended to be a longitudinal data collection. The surveys will need current year analysis, a process for longitudinal archiving in a data warehouse, and a decision support system (DSS) for generating prespecified reports, ad hoc queries, and data extraction files for other applications.

The scope of the work includes: Appraise and Revise HQMA Developed Retention and Exit Surveys; Select Sample Stratification for Retention Survey; Upgrade Current Electronic Survey Questionnaires (HQMC); Design and Implement Survey Data Warehouse; Design and Implement Decision Support System (DSS); Complete Survey Test Cycles; Administer Surveys (HQMC); and Analyze Data.

The final product will include a written report analyzing USMC officer and enlisted retention and a briefing at HQMC of results of survey analyses including recommendations for retention policies. In addition, a data warehouse will be built for archiving current and future survey results with a user interface for report generation and data extraction.

DoD KEY TECHNOLOGY AREAS: Manpower, Personnel, and Training, Modeling and Simulation

KEYWORDS: Officer Retention, Enlisted Retention, Retention Survey, Decision Support Systems, Data Warehousing

DIVERSITY ANALYSIS FOR UNITED STATES NAVY LEADERSHIP CONTINUUM

George Thomas, Professor

Department of Systems Management

Sponsor: Naval Education and Training Command

OBJECTIVE: To provide assessment of the diversity component of the Intermediate Officer module of the Leadership Continuum.

SUMMARY: This is a project that continues in 1999. During CY 1998 a module for the Leadership Continuum on Gender Awareness was created.

PROJECT SUMMARIES

CONFERENCE PRESENTATION:

Thomas, George and Truesdale, Lisa, "Navy Recruit Training as a Gendering Process," Women's Research and Education Institute Annual Conference, Washington, D.C., December 1998.

THESIS DIRECTED:

Truesdale, Lisa, "Navy Recruit Training: A Gendering Organization?" Master's Thesis, Naval Postgraduate School, March 1998.

DoD TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Leadership, Diversity Management

SUPPORT FOR DEVELOPMENT OF TROOP PROGRAM UNIT (TPU) LEADERSHIP TRAINING

Kenneth W. Thomas, Professor

Department of Systems Management

Sponsor: Office of the Chief, Army Reserve

OBJECTIVE: The goal of this project was to increase TPU readiness and retention by providing improved leadership training for TPU commanders. Specifically, this project developed a program of instruction (POI) for a leadership course for new or prospective TPU commanders, together with a pamphlet on TPU leadership to support that course.

SUMMARY: Troop Program Units (TPUs) are company-level units in the U.S. Army Reserve. An existing course for prospective TPU commanders has focused largely on specific administrative tasks, rather than on larger issues related to the effective leadership of the unit. In FY96, Professors Bob Barrios-Choplin and Kenneth Thomas had published the findings of a study that identified specific leadership behaviors by TPU commanders which were related to unit effectiveness: K.W. Thomas and B. Barrios-Choplin, "Effective Leadership in TPUs: Findings from Interviews at 16 Units" (Naval Postgraduate School Technical Report NPS-SM-96-002). In FY97, with funding from the Army Studies Program and the support of the Commander, Army Reserve (CAR), the project discussed here developed a revised POI for the existing pre-command course that incorporated key findings from the FY96 study. It also revised the earlier technical report into material for a U.S. Army Reserve Command (USARC) pamphlet on leadership to support that course. During FY98, the researcher remained available for technical support to USARC, and to the ARTEP personnel at Fort McCoy, Wisconsin, who were responsible for implementing the revised course. Continuing progress was also made on the conceptual model of leadership derived from the earlier USAR research. However, during early FY98, a new CAR assumed command, and implementation of the new course was put on hold.

CONFERENCE PRESENTATION:

Thomas, K.W., "A Three-Dimensional Model of Leadership Values from the U.S. Army Reserve: Qualitative Evidence and Theoretical Ramifications," 6th International Conference on Work Values and Behavior, Istanbul, Turkey, 12-15 July 1998.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Leadership Training, Retention, Readiness, Troop Program Unit, Army Reserve