

MASTER OF SCIENCE IN MANAGEMENT

THE IMPACT OF INCREASED ANTITERRORISM/FORCE PROTECTION REQUIREMENTS ON SHIPS' OPERATIONS FUNDING

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Since the terrorist attack on USS COLE (DDG 67) and more recently the attacks on New York City and the Pentagon, Antiterrorism/Force Protection (AT/FP) requirements have increased dramatically throughout the Department of Defense (DOD). As these requirements escalate in scope and number, so do the costs of meeting them. In the Navy, ships are bearing a portion of these costs out of their operations funding.

Type Commanders (TYCOMs) fund the operations of all ships and squadrons under their command. In order to have a firm grasp on how these new AT/FP requirements will affect them financially, they must be able to forecast the costs related to them and make appropriate adjustments to their existing ships operations funding model. Acquiring a better grasp on the fiscal impacts of these new requirements will allow Type Commanders to more effectively budget for them in the future. This thesis provides a shipboard AT/FP cost estimation model to aid in forecasting costs associated with these activities.

KEYWORDS: Antiterrorism/Force Protection, Type Commander, Cost Estimation, Operational Target, Phased Replacement, Unfunded Requirement

AN ANALYSIS OF ALTERNATE ACCESSION SOURCES FOR NAVAL OFFICERS

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This thesis analyzes the effect of commissioning source on the retention and promotion outcomes of Naval officers to the O-4 promotion point. In particular, this thesis analyzes differences in the joint probabilities of retention and promotion for officers from each commissioning program. This study identifies improved measures of Navy officer performance and the relative cost-effectiveness of each commissioning program.

A database of career milestones and productivity indicators for Navy officers from year groups 1983-1990 has been created from Navy Officer Data Card information and annual promotion board results through the career milestone point O-4. Multivariate logit models of retention and promotion are specified to estimate the independent effect of accession source on URL and Restricted Line officer retention and promotion outcomes. The logit models control for other determinants of retention and promotion such as undergraduate experience and capital investment. Using an assumed steady-state flow of officers, differences in promotion and retention outcomes at various grades are used to estimate the number of accessions associated with producing a single O-4 from each commissioning program. Total lifecycle costs required to retain and promote these officers to the O-4 point are calculated and used as the basis for the cost-effectiveness analysis.

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The cost-effectiveness outcomes depend on whether marginal or average costs are used. However, the results suggest that for URL officers USNA is generally the most cost-effective commissioning program, but the ROTC-Contact program may be underutilized. Additionally, the results do not support the belief that having a technical degree is critical to success in the Navy.

KEYWORDS: Officer Accession Sources, Officer Commissioning Programs, Officer Retention, Officer Promotion, Cost-Effectiveness Analysis

AN ANALYSIS OF IMPROVISATIONAL BUDGETING FROM CALENDAR YEAR 1990 TO 1999

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Improvisational budgeting represents an interruption to the normal budgeting process, resulting in costly delays to the defense Planning Programming and Budgeting Process (PPBS). A normal Congressional budget process was characterized by Congress' ability to follow established procedures, complete their budget in a timely manner and fulfill their expected roles for applying incremental adjustments to the budget. The latent pro-spending bias and intrinsic political behavior within the budgetary process, in conjunction with a U.S. economy bitten by stagflation in the 1970s, was a recipe for the creation of enormous debt and political breakdowns in the 1980s. The result of these factors was a breakdown of the normal budgeting process, subsequently circumvented by improvisational budgeting. Ramifications include continuing resolution appropriations, appropriations passed before authorizations, delayed bills or even government shutdowns. These ramifications impact DoD's ability to issue accurate Budget Estimate Submissions during budget formulation, increasing the level of uncertainty in the PPBS process. This can negatively impact defense programs requiring accurate forecasting to remain executable. It is important to further explore the decade of the 1990s to ascertain whether harmony could be restored in a budgetary process defined by a surplus rather than the deficit spending-driven improvisational budgeting of the 1980s.

KEYWORDS: Improvisational Budgeting, Planning, Programming & Budgeting (PPBS), Classic Period of Budgeting, Defense Appropriation and Authorization Bills from 1990-1999, Pork and Turf Issues in Congressional Budgeting

AN ANALYSIS OF THE EFFECT OF GRADUATE EDUCATION ON THE JOB PERFORMANCE OF FEDERAL (DOD) CIVILIAN EMPLOYEES

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The main purpose of this study is to examine the relationship between graduate education and the job performance of DoD civilian employees. The thesis focuses on selected job performance measures for all civilian DoD personnel employed between 1986 and 1999, except for those in the National Imagery and Mapping Agency and direct and indirect hire civilian employees outside the 50 states and the District of Columbia. The Defense Manpower Data Center (DMDC) provided the personnel data. Performance measures that are analyzed include promotion, promotion speed, performance ratings, earnings and retention. Three different techniques are used to estimate performance models. First, ordinary least squares is used to estimate the salary and performance rating models. Second, binary logit regression is used to estimate promotion, retention, and performance rating models. Third, survival analysis using Cox Regression estimates the speed of promotion and the time to separation. The results indicate that employees with a Master's or Doctorate earned more in average salary but experienced lower salary growth than employees with a Bachelor's degree. Also advanced degree holders are promoted more slowly since they

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enter at a higher GS grade. Higher educated employees were also more likely to leave federal service, but were more likely to receive top ratings and achieve a supervisor position.

KEYWORDS: Graduate Education, Job Performance, DoD Civilians, Survival Analysis, Retention Salary, and Promotion Speed

ANALYSIS OF FACTORS AFFECTING THE RETENTION PLANS OF JUNIOR UNITED STATES' NAVY OFFICERS

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This thesis investigates the factors that influence the retention intentions of 373 junior male Navy officers who are serving within their initial obligated service. To estimate the models, data for this thesis were drawn from responses to the 1999 DoD Survey of Active Duty Personnel. The survey includes data on retention intentions of service members. Past research has shown that a member's intention is a good predictor of retention behavior. Logistic regression analysis is used to identify demographic, tenure, economic, and other characteristics that significantly affect the intention to stay or to quit the military and to assess their relative importance. The SAS software package is used to analyze the data.

The model developed for this thesis is successful in identifying several factors influencing the retention intentions of junior male Navy officers. Nine of the seventeen variables included in the model have a significant impact upon retention. Officers' decision to remain on active duty were significantly influenced by the demographic characteristics of family status; the tenure characteristics of military rank (O3) and military life expectation; the economic characteristics of the transferability of skills gained in the navy over to a good civilian job, and the satisfaction with military work values, and military allocation of time.

KEYWORDS: Navy, Officer, Retention and Quality of Life, Logistic Regression

A STUDY OF THE ALPHA CONTRACTING PROCESS AND ITS EFFECTS ON INTEGRATED PRODUCT AND PROCESS DEVELOPMENT (IPPD) WITHIN SELECTED ARMY ACQUISITION PROGRAMS

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This thesis evaluates the sole-source method of Alpha Contracting in the Army's HMMWV, Bradley A3, and AFATDS acquisition programs and examines the advantages and disadvantages associated with its implementation. Specifically, the research focuses on the effects of Alpha Contracting on the Integrated Product and Process Development (IPPD) concept and its associated use of Integrated Product Teams (IPTs). The objective is to determine if Alpha Contracting, in concert with the IPPD process, supports DoD's ultimate acquisition goal of providing warfighters with effective systems on schedule at an affordable cost. Ultimately, this analysis will lead to the development of a set of recommendations for its implementation in future acquisition endeavors. The research conducted for this thesis includes an analysis of the Alpha Contracting process, an in-depth review of the IPPD management process, a detailed examination of current Army acquisition programs utilizing the Alpha Contracting process to determine the extent of its advantages and disadvantages, and an analysis of the cause and effect of any failed expectations of the process.

KEYWORDS: Alpha Contracting, Integrated Product and Process Development, Integrated Product Teams, Empowerment, Innovation, Streamlining

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A STATISTICAL ANALYSIS OF OFFICER RETENTION IN THE U.S. MILITARY

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This thesis examines the effect of officer commissioning sources on the retention of officers at two different career points: (1) At the end of the initial service obligation (MSR), and (2) at ten-years of service. The goal of this study is to help policymakers in setting and implementing personnel policies by providing information on the effectiveness of each commissioning program. The Defense Manpower Data Center in Monterey, California, provided the data file used in the analysis of officer retention. The data file contained longitudinal information on the population of officers who entered the military between 1985 and 1995. Logit regression models were used to analyze officer retention at MSR and at the ten-year point. Results indicate that retention behavior varies across commissioning programs. Significant differences in retention are observed among graduates of the Service Academies, ROTC Scholarship and ROTC Non-scholarship Programs, Officer Candidate/Training Schools, and Direct Appointment Programs. The differences are observed for all services combined and for each individual service. In most of the models, commissioning source variables are significant; however, the magnitude differences in retention between the five major commissioning sources often are not large. Moreover, the direction of the retention effect often varies across the services for each commissioning program. Further research on officer commissioning programs is recommended to include individual preferences and job satisfaction in the analysis of officer retention.

KEYWORDS: Officer Retention, Retention Rates, Officer Commissioning Sources, Logit Analysis

TESTING THE STATUTORY COHERENCE HYPOTHESIS: THE IMPLEMENTATION OF THE MARITIME SECURITY ACT OF 1996

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Federal maritime policy has evolved as an accumulation of statutes and administrative programs intended to respond to global and domestic issues and trends within the maritime industry. The Maritime Security Act of 1996 (MSA) amended the Merchant Marine Act of 1936 in an attempt to revitalize the U.S.-flag merchant marine. The cornerstone of the MSA is the Maritime Security Program, which replaced the legacy Operating Differential Subsidy by compensating U.S. carriers for the higher costs of operating ships under a U.S.-flag compared to those of foreign-flag competitors. This thesis analyzes the MSA using a policy analysis framework developed by Sabatier and Mazmanian. The analysis identifies and evaluates critical variables affecting the achievement of statutory objectives. The absence of clearly defined objectives gives rise to inherent difficulty when attempting to measure what specifically constitutes attainment of MSA statutory success. The principle causal linkage between government intervention and the attainment of the legislative objective is through the provision of monetary subsidies. The study concludes that the MSA is a short-term policy that represents the continuation of a "bandage" solution to the hemorrhaging of U.S.-flag vessels to more profitable foreign registries and is not achieving its objective of revitalizing the U.S. merchant marine.

KEYWORDS: Maritime Security, Merchant Marine, Strategic Sealift, U.S. Maritime Policy, Public Policy Implementation, National Security

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AN ANALYSIS OF THE PROPOSED LAND LEASE AGREEMENT BETWEEN THE NAVAL POSTGRADUATE SCHOOL AND THE CITY OF MONTEREY, CALIFORNIA

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A constant in today's Department of Defense (DoD) is the push for installations to save money by privatizing and outsourcing service functions currently performed by Federal Government employees. As an alternative to privatization and outsourcing, installations are looking increasingly towards cooperative public-public and public-private partnerships to facilitate innovative cost saving initiatives. The success of current DoD partnering initiatives suggests that government's partnering with municipalities to reduce the cost of installation support services could produce substantial savings.

This thesis examined the proposed land lease agreement between the Naval Postgraduate School (NPS) and the City of Monterey as a means to reduce facilities operation and maintenance costs and provide capital improvements to facilities infrastructure at NPS, while also providing additional recreational facilities and maintenance responsibilities at competitive costs for the City of Monterey.

The method of analysis included a literature review of business practices and industry publications associated with partnering initiatives, and semi-structured interviews conducted with 23 individuals from three primary stakeholder groups.

Findings indicate that NPS and the City of Monterey could benefit from the proposed agreement in terms of cost savings, improved infrastructure, and recreational assets for the City. Implementation difficulties include substantial differences in terms of cost accounting practices, communication and decision-making structures, and corporate cultures.

KEYWORDS: Partnering, Privatizing, Outsourcing, Cost Savings, DoD

IMPACT OF QUALITY OF LIFE ON THE REENLISTMENT INTENTIONS OF JUNIOR ENLISTED UNITED STATES MARINES

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The purpose of this thesis was to investigate the impact of Quality of Life (QOL) programs and QOL domains on the reenlistment intentions of junior enlisted (paygrades E2-E4) United States Marines. Data were extracted from the FY 2001 USMC Retention Survey. The data set was restricted to junior enlisted Marines with Active Duty Base Dates of calendar year 1998 and 1999 and was further stratified by gender. A complete conceptual model for reenlistment was developed which incorporated demographic characteristics, QOL programs, QOL domains, and civilian employment opportunities. Cross-tabulations of survey responses were performed by gender, race, marital status, and geographic location. Logit maximum likelihood estimation techniques were used to determine the marginal and percentage effects of QOL programs and QOL domains on the reenlistment intentions of junior enlisted Marines. The results confirm previous research in this area.

KEYWORDS: Quality of Life, Retention

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UNIFORMED SERVICES THRIFT SAVINGS PLAN: ANALYSIS, PERCEPTIONS, AND ALTERNATIVES

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Since January 1, 2002, uniformed service members have been able to set aside a portion of their income into a tax-sheltered, defined contribution plan. This study analyzed the level of understanding and perception that military members have concerning the UNISERV TSP. It also assessed the training, education, and awareness levels in the areas of personal finance and federal income tax incentives related to retirement savings vehicles.

A 35-question written questionnaire was administered to 189 military members from 43 commands in Navy Region Southwest. The study revealed that the level of training received to date is inadequate and insufficient for Navy personnel to make educated and informed decisions regarding retirement savings in general, including the UNISERV TSP ($p \leq .01$). Related conclusions revealed that a non-matching UNISERV TSP has no measurable effect on retention or recruitment and a matching program could improve the contribution rate by 200 percent.

The predominate recommendation is for senior leadership to increase their commitment and resources toward training all Navy personnel on the mechanics and long-term benefits of the UNISERV TSP and retirement savings.

KEYWORDS: UNISERV TSP, Military Retirement, Thrift Savings Plan, Defined Contribution Plans, Defined Benefit Plans, Individual Retirement Arrangements (IRAs), Chi-square, Roth

AN ANALYSIS OF FACTORS AFFECTING THE RETENTION PLANS OF JUNIOR MALE US ARMY OFFICERS: EVIDENCE FROM THE 1999 DOD SURVEY OF ACTIVE DUTY PERSONNEL

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This thesis investigates the factors that influence the retention intentions of 680 junior male Army officers who are serving within their initial obligated service. To estimate the models, data for this thesis were drawn from responses to the 1999 DoD Survey of Active Duty Personnel. The survey includes data on retention intentions of service members. Past research has shown that a member's intention is a good predictor of retention behavior. Logistic regression analysis is used to identify demographic, tenure, economic, and cognitive characteristics that significantly affect the intention to stay or to quit the military and to assess their relative importance. The SAS software package is used to analyze the data.

The model developed for this thesis is successful in identifying several factors influencing the retention intentions of junior male Army officers. Eight of the seventeen variables included in the model have a significant impact upon retention. Officers' decision to remain on active duty were significantly influenced by the demographic characteristics of family status and race; the tenure characteristics of military rank (O3) and military life expectation; the economic characteristics of the probability of finding a good civilian job, and the cognitive characteristics of satisfaction with military intrinsic values, military career advancement opportunities, and military deployment and economic life.

A quadrant analysis of the satisfaction variables is used to indicate areas for improvement in order to raise the military's overall level of job satisfaction. High impact candidate areas for improvement were identified: workload, personal time, and enjoyment satisfaction. These are excellent candidates for

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immediate attention since they have a considerable impact on overall satisfaction with military life and have substantial room for improvement.

Finally, this thesis recommends areas for further related research and future policy.

KEYWORDS: Army, Officer, Retention and Quality of Life, Logistic Regression

ANALYSIS AND EVALUATION OF HIGH SPEED FERRIES FOR USE AS LOGISTIC SUPPORT VESSELS IN SUPPORT OF JOINT LOGISTICS OVER-THE-SHORE

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Recent developments in High Speed Ferry (HSF) technologies, and the successful use of the HMAS Jervis Bay as a Logistic Support Vessel (LSV) by the Royal Australian Navy, introduced the potential for HSFs to serve as LSVs in support of Joint Logistics Over-the-Shore (JLOTS). This thesis analyzes the opportunities available to the Department of Defense (DoD) to utilize HSFs as LSVs in support of JLOTS.

In conducting the analysis, this thesis considers the observations and lessons learned from the Australian use of the HMAS Jervis Bay, previous testing of an Incat 91-meter HSF by the Naval Surface Warfare Center Carderock Division, the initiatives of the current Joint Venture (HSV-X1) lease, current JLOTS doctrine, and the principles of Joint Vision 2010 and 2020.

Our research concludes that HSFs possess certain advantages over current LSVs in the areas of speed, range, and payload. It is these advantages that give the HSFs the ability to perform both modern day and future JLOTS operations with greater flexibility than current LSVs. It is suggested that by using HSFs as LSVs during JLOTS operations, DoD could employ a technically advanced and highly capable platform that could augment or replace current LSVs.

KEYWORDS: Joint Logistics Over-the-Shore, High Speed Ferry, High Speed Sealift, High Speed Shipping, Logistic Support Vessel

A CLOSER LOOK AT THE A-76 PROCESS: ANALYSIS OF OPINIONS FROM THE GENERAL ACCOUNTING OFFICE

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This thesis identifies the case principles and trends involving A-76 Process issues brought before the General Accounting Office. It reviews the background, history, issues and current methods of applying the A-76 Process in the Department of Defense. It then categorizes and analyzes the A-76 protest decisions handed down from the Comptroller General from January 1, 1997 to December 31, 2001. Following the review and analysis, the interpretations of the statutory requirements by the Comptroller General are examined to determine if the current design of the A-76 process is being applied as it was originally designed. It also examines protest decision trends to determine what changes are needed to mitigate the risk of future A-76 protests.

KEYWORDS: A-76 Process, Outsourcing, Privatization, GAO Comptroller General Decisions

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INTERNATIONAL TRAINING FOR PEACE SUPPORT OPERATIONS: MODELS, ASSESSMENTS AND IMPLICATIONS

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In the decade following the Cold War, the frequency and complexity of United Nations-mandated Peace Support Operations (PSO) significantly increased. Consequently, international, regional, and national organizations developed various training programs to prepare military personnel for diverse mission requirements.

This thesis conducts a comparative analysis of PSO training by examining the United Nations international model, the regional approach of the Nordic Countries, and national training programs of the Canadian Forces, the German Armed Forces, and the United States Military. Based on strengths and weaknesses of these models, this research identifies significant criteria and implications for developing a viable, institutionalized PSO training program in the United States Military.

This study draws the following conclusions: The United Nations lacks a unifying doctrine for PSO and associated training required to coordinate subordinate programs among Member States and regional organizations effectively; The Nordic coordinated program for PSO training at the regional level represents a unified commitment to promote interoperability and knowledge management for future missions; The United States Military lacks an institutionalized PSO training program to meet long-term operational requirements at the tactical level for individuals and units.

KEYWORDS: Peace Support Operations, Peacekeeping, Training Models, Comparative Analysis

A REDESIGN OF THE NAVY'S ENLISTED PERSONNEL DISTRIBUTION PROCESS

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Past studies show that significant positive results can be reaped if a two-sided matching algorithm is used in the Navy enlisted distribution process. This includes ensuring that commands get the quality of sailors that they demand while satisfying sailors' preferences of their next billet, and thereby improving their motivation and propensity to reenlist. Past studies have also examined the current process in the Navy and detailed its shortcomings. Other research has also detailed the possible uses of optimization technology, smart agent technology, employee-to-job matching algorithms, incentive driven assignments and other technologies to improve on employee-job assignments in large hierarchical internal labor markets, like those found in the military. It is also noted that there are constraints within the military that can pose challenges to the direct application of these technologies to improve the process. These constraints can be structural, behavioral, political, and cultural. To improve the current process, both the available technologies and constraints need to be reexamined holistically and the technologies and current personnel policies modified to meet these needs. This study looks at these issues and proposes an alternative design of the Navy enlisted distribution process that will yield quantum gains for the Navy and its sailors. It details the key operational and user specifications required of a prototype Navy enlisted distribution decision support system.

KEYWORDS: Enlisted, Personnel, Distribution, Assignment, Detailing, Placement, Allocation, Decision Support Systems, Two-Sided Matching, Optimization, Process Redesign, Screening, Scoring Ranking, Matching

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TRAINING FOR TERROR: A CASE STUDY OF AL-QAIDA

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A recently acquired translated copy of an Al-Qaida training manual is analyzed utilizing the Four Frameworks Model, which states that organizations can be better understood if they are studied from structural, human resources, symbolic, and political perspectives. An overview of Middle Eastern terrorism, a synopsis of the Al-Qaida organization, a review of the contents of the training manual, and an Al-Qaida policy review are also delineated. Of the many conclusions presented, the first states that the Al-Qaida training manual and its precepts are indeed being used to guide terrorist operations. Al-Qaida believe their cause is just based on religious decrees, and that the use of training manuals helps to portray the group in a favorable light, reinforces ideology, and builds support. Al-Qaida have a strong need to rationalize and justify what they do. The success of the World Trade Center and Pentagon bombings may have given Al-Qaida a spiritual boost and hardened their resolve to continue their mission, despite the U.S. War on Terrorism. Recommendations and areas of further research are presented to enhance the intelligence community's understanding of the internal workings of the group.

KEYWORDS: Terrorism, Al-Qaida, Training, Case Study, Four Frameworks Model

U.S. – EUROPEAN RELATIONS PRE- AND POST SEPTEMBER 11, 2001

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Throughout the more than 50 years in which the North Atlantic Treaty Organization (NATO) has secured peace and stability in Europe, relations between the U.S. and its European allies remain a persistent paradox - unified, yet at considerable odds. It is a partnership that is consistent and strong, yet troubled and fragile.

This thesis analyzes the emerging European-American relationships based on perceptions of key stakeholders, including pre- and post- September 11 attitudes, and persistent concerns. Although history may repeat itself, globalization of politics, finance and national security increasingly connect Europeans, Americans and other nations. The complexity of these relationships is studied to reveal common themes relevant to evolving European-American relations.

This study reveals the following findings: France, Germany and the United Kingdom represent the overall voice of European policies; the interpersonal relations between prominent European and American stakeholders appear more substantial and influential than publicly acknowledged; European stakeholders perceive the current U.S. administration as generally reflective of a bygone era; the number of European partners are increasing and European voices are moving tentatively closer to a common voice on foreign and security issues; and important European domestic issues appear to dominate European concerns, often overshadowing the American preoccupation on terrorism.

KEYWORDS: International Decision Making Process, Stakeholder Analysis, European-American Relations, European-American Stakeholders

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DEPARTMENT OF DEFENSE QUALITY MANAGEMENT SYSTEMS AND ISO 9000:2000

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The purpose of the research is to examine and evaluate the emergence of the International Organization for Standardization, commonly referred to as ISO, quality standard for the year 2000 as it applies (past and present) to the Department of Defense (DoD) quality management system (QMS) in procurement. In particular, the researcher will examine the new standard and its utility for DoD procurement, focusing on changes from the previous ISO 9000 series. Leading defense industry quality managers and Defense Contract Management Agency Quality Assurance Managers will provide insight to the thesis. In order to understand the present and future of DoD Quality Assurance and Management, the thesis will briefly look at past quality assurance policy from DoD and the ISO. Likewise, this research will explore issues and concerns that contracting officers and program managers in Government will now need to become familiar with as they execute ISO 9000:2000. The effort will emphasize how ISO 9000:2000 fits within the realm of DoD procurement and what organizations need to do in order achieve excellent products in a total quality management environment.

KEYWORDS: Quality Management Systems, ISO 9000

RELIABILITY THE LIFE CYCLE DRIVER: AN EXAMINATION OF RELIABILITY MANAGEMENT CULTURE AND PRACTICES

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The importance of reliable and maintainable equipment in the hands of our service members cannot be overstated. Reliability has been identified as the life cycle cost driver for defense weapon systems. Knowing that the reliability of a weapon system directly impacts upon that system's operational capability and life cycle costs makes it of fundamental importance to the warfighter. In recognition of its importance, it is mandatory for all program managers within the Department of Defense (DoD) to ensure their program accounts for the user's reliability objectives. However, reliability failures continue to disappoint operators, maintainers and testers of DoD systems.

This thesis evaluates reliability management within the acquisition process of Naval Aviation programs. Reliability, logistical, and program management personnel directly involved with the issues of reliability management provided empirical insight to help the researcher identify root causes and risk mitigation techniques that are critical to reliability optimization.

KEYWORDS: Reliability, Program Management, Acquisition, Management

AN ANALYSIS ON THE IMPACT OF THE 1972 ABM TREATY AND ITS AFFECT ON THE PROCUREMENT OF A NATIONAL MISSILE DEFENSE SYSTEM

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For the last thirty years, many strategists have considered the 1972 Antiballistic Missile (ABM) Treaty as the foundation for arms control. Others have insisted that its existence perpetuates American vulnerability to a ballistic missile attack. Since its inception, the ABM Treaty has been amended only once, but the

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geopolitical structure of the world has changed dramatically. The Cold War has ended and many new threats have emerged. The once bipolar world, which is reflected in the treaty, has transformed into a multithreat domain of instability. In response to these new threats, President George W. Bush has indicated that he strongly desires to procure a national missile defense (NMD) system. The terrorist attacks on the Pentagon and World Trade Center indicated that the United States has indeed become a target to extremists who are willing to use weapons of mass destruction (WMD) to harm American citizens. These events also strengthened President Bush's resolve to deploy a NMD system. However, the ABM Treaty acts as a roadblock. This thesis examines the impact of the ABM Treaty on the procurement of a NMD system and investigates the treaty's current utility.

KEYWORDS: Antiballistic Missile Treaty, National Missile Defense Procurement

CHARACTERIZING SAILOR AND COMMAND ENLISTED PLACEMENT AND ASSIGNMENT PREFERENCES

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This paper will report on the results to date in developing a sailor/command database for redesigning the enlisted placement and assignment process. DoN currently matches sailors to billets using a labor-intensive detailing process. With evolving information technology, the assignment process could be accomplished using intelligent agents and web-based markets. This integrated agent/market process was tested using representative sailors and jobs in a "laboratory setting," to examine actual versus predicted matching performance for human detailers, the two-sided matching markets and optimization algorithms. Economics experiments tested quality of fit in assignments made by both human detailers and the two-sided matching algorithm.

Experimental results to date have been promising, but they have used sailors and commands with hypothetical characteristics and preferences. As such, experimental and simulation results may not reflect how assignment algorithms would perform in the Navy's enlisted detailing environment. Meaningful comparisons across detailing approaches must use a realistic database of sailor and command preferences and characteristics.

This research investigates sailor and command preferences for a particular enlisted community, identifying the characteristics of both sailors' preferences over jobs and commands' preferences over sailors. Data concerning both the number and type of characteristics considered important by both sailors and commands represent important design features of any revised assignment process.

KEYWORDS: Manpower Policy, Distribution Process, Job Assignment, Preferences, Detailing

INTEGRATED PRODUCT TEAM EFFECTIVENESS IN THE DEPARTMENT OF DEFENSE

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In 1995, then Secretary of Defense William Perry, directed a "fundamental change" in the way DoD did business when he endorsed and required the use of the Integrated Product and Process Development (IPPD) management technique. The use of multidisciplinary Integrated Product Teams (IPTs) is the cornerstone of this technique. This research focused on what key factors, specifically team training and

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empowerment, lead to the success, or lack of success, of IPTs. Twenty IPT participants, ten team leaders and ten other team members, were interviewed and asked their views on the current state of training and empowerment as they relate to IPTs. This research, though only a small sample size, revealed that DoD still has a long way to go if it is to meet its own goals of effectively utilizing IPPD. The primary conclusion of the research is that DoD's overuse of the term IPT is the key factor that IPPD and IPTs are not being utilized to their full potential. The thesis recommends possible solutions and areas of further research to help alleviate this problem.

KEYWORDS: Integrated Product and Process Development (IPPD), Integrated Product Team (IPT), Teaming, Department of Defense (DoD)

AN EXPLANATORY ANALYSIS OF FIRST-TERM REENLISTMENT MODELING USING THE PerSMART DATA WAREHOUSE

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The Navy Bureau of Personnel has constructed a data warehouse (PerSMART) for use by Navy manpower planners. PerSMART is currently building a Retention Monitoring Module (RMM) intended to give Navy manpower planners a way of quickly assessing the impact of current and proposed policies on enlisted retention within the Navy. The purpose of this thesis is to examine the structure of PerSMART and identify possible data and models that could be useful in the construction of the Retention Modeling Module (RMM). The first part of this thesis conducts a literature review of studies looking at civilian and military retention and the effects of compensation, in particular Selective Reenlistment Bonuses (SRB), on retention. The second half of this thesis estimates and specifies a model examining the effects of SRBs on the retention behavior of Zone A sailors at the reenlistment decision point during fiscal years 1995-2001. The model shows a positive relationship exists between SRBs and retention. A one-unit increase in the SRB multiple was found to increase the probability of reenlistment by 3.6 percentage points on average. However, the marginal effect varied across rating groups from 0.8 to 10.4 percentage points. Finally, recommendations are given for future model specifications and sources of data.

KEYWORDS: Modeling, Compensation, Retention, Selective Reenlistment Bonus, PerSMART, ACOL

360-DEGREE FEEDBACK IMPLEMENTAION PLAN: DEAN POSTION, GRADUATE SCHOOL OF BUSINESS AND PUBLIC POLICY, NAVAL POSTGRADUATE SCHOOL

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360-degree feedback is a personal development and appraisal tool designed to quantify the competencies and skills of fellow employees by tapping the collective experience of their superiors, subordinates, and peers. Substantially better than the hierarchical, single-source assessments employees are familiar with, this multi-source system provides participants with a comprehensive interpretation of their performance from numerous perspectives within the organization. The objective of this thesis is to develop a 360-degree feedback system tailored specifically for the Dean position, Graduate School of Business and Public Policy, Naval Postgraduate School. This thesis presents a literature review, a case description involving the Dean

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position, and discusses a series of interviews conducted with key groups of organizational stakeholders. With the results of this research confirming the need for and potential content of a feedback system, this thesis culminates by presenting 360-degree feedback procedures and documents created specifically for the Dean position.

KEYWORDS: 360-Degree Feedback, Multi-rater Feedback, Multi-source Feedback, Leadership

INTEGRATED LOGISTICS: OPTIMIZING THE USMC QUADRANT MODEL USING INTELLIGENT AGENT TECHNOLOGIES

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In 1998, the Marine Corps initiated the Integrated Logistics Capability (ILC) to specifically address issues related to Marine Corps logistics doctrine, policy, and processes. The purposes of ILC initiatives were to define, measure, and improve core logistics capabilities to meet the challenges of the new millennium and beyond. In an effort to improve cost leverage, enhance the robustness of supplier relationships, and substitute technology and information for inventory, a segmentation methodology called the Quadrant Model approach was introduced. The Quadrant Model is essentially a two-by-two matrix that classifies products, services, and inventory items into four major cells. Each cell is further categorized by uniqueness and value, and each cell implies different approaches to managing inventory, supply chains, and vendor relationships. The objective of this thesis is to determine how Intelligent Agent (IA) technologies may innovate the logistical processes associated within the critical quadrant, which categorizes materials, products and services that are unique, high value in terms of cost, and therefore high risk. Building upon previous IA research, a novel method for identifying IA opportunities is applied to a high-level process model of the "critical" quadrant. Two IA applications appear to be particularly promising: performative (market research) and advisory agents. Both types of agents have been successfully used in Internet search and retrieval engines. The author identifies how these automated tools can support functions related to acquisition planning and market research within the "critical" cell of the Quadrant model.

KEYWORDS: Integrated Logistics Initiative, Quadrant Model, Intelligent Agent Technologies, Standard Procurement System

COST SAVINGS ASSOCIATED WITH THE LV 100-5 TANK ENGINE

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The LV 100-5 turbine engine is the replacement for the AGT 1500 engine in the Abrams Main Battle Tank. The AGT 1500, produced with the Abrams in 1980, has now aged to the point where the engine costs exceed 60% of the total operations and support costs for the tank itself. In looking for a new engine, the Army also looked to improve the notoriously poor fuel economy associated with the Abrams. Besides the tremendous reliability and maintenance improvements, the LV 100-5 is designed to be over 25% more fuel-efficient during movement and 50% more efficient at idle than the AGT 1500. Prototypes of the LV 100-5 are due in May 2002 with full-rate production beginning in 2003.

The objective of the thesis is to accurately determine the savings in gallons and dollars by this significant reduction in fuel usage. Research includes a detailed analysis of the LV 100-5 engine and a comparison to its predecessor, the AGT 1500, followed by the analysis of savings in a combat scenario and its life cycle. The information collected in this thesis provides further information for the Abrams Project Manager in his cost/benefit analysis.

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KEYWORDS: Systems, M1A2, Tank, Engine, Fuel, Fuel Economy

CORE COMPETENCY NEEDS ANALYSIS FOR U.S. NAVAL RESERVE TRAINING AND ADMINISTRATION OF RESERVE (TAR) OFFICERS

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This thesis identifies fundamental Reserve management-related core competencies required for Training and Administration of the Reserve (TAR) officers. In-depth interviews were conducted with 21 experienced TAR officers who defined and described essential competencies for TAR officers. Additionally, they identified competency gaps and offered recommendations as to how TAR officers could better develop the competencies. Based on the analysis of the interview data, nine core competencies were determined. Interview participants then prioritized the nine competencies by responding to an electronic survey. The thesis describes each competency, prioritizes the competencies, and discusses the skill gaps that currently exist among TAR officers. Recommendations for a career-focused TAR officer professional development program are provided that address billet- or career phase-based training needs.

KEYWORDS: Core Competency, Needs Analysis, Training and Development, Professional Development, Knowledge, Skills and Abilities (KSA), TAR Officers, Manpower

THE CAPABILITY OF THE AIR MOBILITY FLEET TO ADEQUATELY SUPPORT ARMY TRANSFORMATION REQUIREMENTS

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The current plan to procure only 134 C-17 Globemaster III aircraft to replace the C-141 fleet will not meet U.S. wartime requirements for core strategic airlift. Although the C-17 is now exceeding design expectations, the fleet will not provide enough core airlift volume for the United States in the 21st Century.

The Army will support Phase I of the Army transformation as it stands up two Initial Brigade Combat Teams. These brigades will have the capability of being deployed anywhere in the world in 96 hours from first aircraft wheels up. Units are being formed with off-the-shelf capabilities and lessons learned from operational experience and the Army's Experimentation Campaign Plan. This thesis examines the ability of our current and future airlift fleet to project and sustain U.S. power abroad as changes are identified in the Army's Transformation process.

KEYWORDS: Air Mobility, Capabilities, Interim Brigade Combat Team

APPLYING INDUSTRIAL DESIGN BEST PRACTICES IN THE ACQUISITION OF SOLDIER EQUIPMENT

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Too often a piece of equipment is delivered which, though functional, is unusable. The computer provides us an excellent example of this phenomenon in our daily life. There are so many features on most

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computers that we will never understand them all, we will never use all the features, and what is worse, the excess features confuse the user and may even make accomplishment of the core task more difficult.

The goal of any designer should be to develop a piece of equipment that facilitates the accomplishment of a task and is a pleasure to use. These criteria must be the overriding considerations of the developer whenever designing a new system or piece of equipment. System designers are better trained and have more resources at their disposal than at any time in history. In addition, designers have media, such as software, which provide unique opportunities to make incredibly effective pieces of equipment to facilitate the accomplishment of virtually any task.

Certainly military program managers are concerned with the acceptance of the equipment they field. However, undesirable equipment is still in our inventory, examples being some of the radio systems, and certain features on military vehicles. This thesis examines why a good design is critical and explores the best ways the program manager can apply industrial design best practices in the development of soldier equipment.

KEYWORDS: Industrial Design, Human Factors, Land Warrior

ANALYSIS OF COMMERCIAL PRICING FACTORS: A FRAMEWORK FOR COMMERCIAL ITEM PRICING

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Recent procurement reform initiatives within the Federal Government have served to significantly reduce the requirement for offerors to provide the Government with cost or pricing data in advance of contract negotiations. The goal of these initiatives is to streamline the procurement process and achieve a procurement environment that more closely resembles the practices of the commercial sector. In order for the Government Contracting Officer to effectively analyze an offer as fair and reasonable and obtain a negotiating position, the Contracting Officer must recognize and understand a myriad of elements that contribute to a commercial firm's pricing objectives.

The purpose of this research is to examine the elements that influence a contractor's pricing as well as the factors applied to their purchasing decisions. This paper will present data that can be analyzed without the benefit of cost or pricing data. The thesis provides a framework for Government Contracting Officers to recognize and analyze these data in preparing for contract negotiations.

KEYWORDS: Taxonomical Surveys, Commercial Item Procurement, Framework for Analysis of Commercial Item Pricing, Proposal Evaluation

AN ANALYSIS OF THE RELATIONSHIP BETWEEN MARITAL STATUS AND FAMILY STRUCTURE AND ON-THE-JOB PRODUCTIVITY

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That married male workers earn more than their unmarried co-workers is now well established in the labor economics literature. Traditional estimates of this marriage premium range from 10 to 40 percent. However, the source of this wage difference between married and unmarried men remains obscure. Some economists attribute this wage differential to differences in job productivity between married and single

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workers. Other economists attribute the wage differential to unobserved characteristics of married workers, i.e., selection effects. This thesis seeks to examine the possible causes of differences in job performance between married and single employers using data on Navy officers. The analysis shows that married male officers receive higher supervisor evaluation scores and promote at higher rates than single male officers. The results also show that there is a positive correlation between supervisor evaluations and promotion. The analysis of the effects of marital status shows that married officers achieved better performance than single officers. Unrestricted line (URL) male officers who have been married longer receive higher performance scores. For both URL and Staff / Restricted Line (STF/RL) male officers performance also increase as the number of dependents increase. OLS regression models also show that male officers who are married have attained more graduate education than single officers. The analysis of selection bias shows that single male officers who will marry in the future perform better than single officers who will remain single in the future. Fixed-effects models that control unobservable individual characteristics support the higher performance of married males. Finally, Heckman style two-step models that control for selection bias due to retention decisions show that the measured effect of marriage is biased upward in single stage models, but that the bias is not large.

KEYWORDS: Retention and Quality of Life (QOL), Manpower Policy Issues, Marriage and On-The-Job Productivity, Investment in Human Capital, Employer Favoritism, Selection Bias, U.S. Naval Officers

**AN ANALYSIS OF IMPLEMENTATION OF THE DEFENSE TRAVEL SYSTEM
AT THE NAVAL POSTGRADUATE SCHOOL
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Master of Science in Management-March 2002**

**Advisor: Joseph G. San Miguel, Graduate School of Business and Public Policy
Second Reader: Don Summers, Graduate School of Business and Public Policy**

This thesis examines the reengineering of the travel management system and implementation of the Defense Travel System at the Naval Postgraduate School. A review of the reengineering process with different goals and principles is provided as background for understanding the reengineering process. Also, the reengineering process and private sector travel systems are reviewed. Eight steps for reengineering the travel system and a model for the travel system are then proposed. This is followed by a historical overview of the travel reengineering process at the Naval Postgraduate School, a Defense Travel System test site, for designing a new travel system. Data were collected from the current travel system, historical records, and personal interviews. The data analysis is completed with a discussion of the Naval Postgraduate School reengineering process and travelers' views on the reengineered travel system from a random questionnaire survey. The research provides conclusions and recommendations regarding the reengineering process, with directions for future research.

KEYWORDS: Travel Reengineering, Business Process Reengineering, Defense Travel System

**A SYSTEMS ENGINEERING DESIGN ANALYSIS OF A U.S.
ARMY SECURE STORAGE SYSTEM
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Master of Science in Management-March 2002**

**Advisor: David F. Matthews, Graduate School of Business and Public Policy
Second Reader: Orin E. Marvel, Department of Information Sciences**

As the Army develops and fields new or improved tactical equipment for the soldier, the challenge of providing for its security, unit-level maintenance, availability, and accountability will exceed the capacity of present systems. This new or improved tactical equipment will include a number of high-cost, technically advanced items that will present storage and other logistical challenges. In garrison, the fixed facilities at unit level are inadequate for the projected need (both quantitatively and qualitatively). Finally,

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there are no current systems specifically designed to provide security, protected storage, availability, and accountability of sensitive and high-value non-sensitive items during training or operational deployments.

This thesis uses a tailored application of the systems engineering process to develop a design for a U.S. Army secure storage system. This study investigates the user's requirements for such a system, as well as requirements and constraints derived from security regulations, military and commercial intermodal transportation methods, and current Army facilities and force structure. It then examines existing Government and commercial equipment to assess their suitability for satisfying secure storage and transportation requirements. Ultimately, this system engineering analysis produces a physical architecture of a mobile secure storage system, as well as selected items of the system architecture.

KEYWORDS: Secure Storage, Intermodal Container, Storage Systems, Containerization, Logistics Transformation, Total Asset Visibility, Arms Room, Weapons Rack, Weapons Storage, Mobile Storage

ANALYSIS OF DEPARTMENT OF DEFENSE CUSTOMS POLICY

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In order for DoD sponsored items to clear foreign customs, DoD employs a unique set of paperwork, Government Bills-of-Lading (GBL) that are different from that used in the commercial sector. The use of GBL allows duty-free passage of government sponsored shipments through foreign offices for delivery to U.S. Forces. USTRANSCOM issued the policies and regulations that govern Customs Clearance procedures for DoD sponsored shipments to deployed forces around the world. In compliance with the directive to "Adopt Best Business Practices" from the commercial sector, this thesis examines the policies and/or procedures currently in place that govern the movement of material in and through Foreign Customs Offices.

KEYWORDS: Defense Transportation Regulation, Customs Clearance, Policy

MEDICAL PLANNING FOR MILITARY OPERATIONS OTHER THEN WAR:

IS A PARADIGM SHIFT REQUIRED?

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Military operations other than war are increasing in frequency and, as one might surmise present unique challenges to the operational commander and the medical planner. Over time and by necessity the U.S. military has developed a logistical support system with unprecedented capability. This logistical system includes a medical system that is increasingly called upon to provide care to people outside the normal scope. Increased participation means Navy assets will be tasked to provide care to U.S. troops, U.N. troops, multinational troops, NGO personnel, and the civilians that precipitated the need for intervention in the first place. The current planning paradigm is, rightfully, focused on combat support. This thesis will investigate the necessity of breaking away from that paradigm when planning MOOTW.

There is no standardized guidance, methodology, templates, matrices or even a set of guiding principles for the medical planner to use when tasked with planning a medically complex contingency

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operation. This thesis will compare the Navy planning method with Army methods and, combined with primary source interviews, and the knowledge acquired in this graduate program, provide the reader with planning guidance unique to the medical aspects of MOOTW.

KEYWORDS: Military Operations Other Than War, MOOTW, Medical, Logistics, Peacekeeping, Humanitarian Intervention, Humanitarian Assistance

SUCCESSFUL STRATEGIES FOR ACHIEVING RELIABILITY REQUIREMENTS IN WEAPON SYSTEMS ACQUISITION

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Second Reader: Lee Edwards, Graduate School of Business and Public Policy

Reducing the logistics burden is a current focus for the Army as it works to develop and field the Objective Force. Increasing reliability is a proven way to achieve this goal, with an added benefit of reducing O&S costs and increasing the effectiveness of the soldiers. Many programs have had difficulty achieving their required reliability. Operational Testing data gathered by the Army Test and Evaluation Command indicates a decreasing trend in achieving reliability requirements with more than 80% failing to achieve requirements. It is intuitive that it would be even more difficult to achieve ultra-reliability, a higher level of reliability and a proposed goal of the Future Combat Systems Program. To determine what successful practices should be used to achieve reliability requirements, we should look to successful programs to show us the way. To that end, this exploratory study questions successful Army programs for practices, recommendations, and lessons learned, that could be shared with other programs to achieve reliability requirements. If we are unsuccessful in our endeavors to improve reliability achievement, future forces will be unnecessarily burdened by our mistakes and incapable of progress.

KEYWORDS: Acquisition Management, Program Management, Reliability, Ultra-reliability, Reducing the Logistics Burden, Successful Practices

THE INTRODUCTION OF APPRECIATIVE INQUIRY TO THE U.S. NAVY USING APPRECIATIVE INQUIRY INTERVIEWS AND THE LARGE GROUP INTERVENTION WITH APPLICATIONS TO U.S. MARINE CORPS LOGISTICS STRATEGIC MANAGEMENT

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This thesis documents the introduction of the Appreciative Inquiry (AI) within the U.S. Navy and discusses applications of the Appreciative Inquiry based Large Group Intervention (AI-LGI) within Marine Corps Logistics strategic planning, implementation, and organizational change. It is a follow on from David Nystrom's thesis "360-Degree Feedback, Leadership, Leadership Development, Performance Appraisal." Unlike traditional top down and bottom up strategies that seek to identify and analyze problems in systems, AI evaluates what gives life to organizations at their best moments by using the power of positive questioning. When combined with a Large Group Intervention, AI is a powerful tool to affect rapid organizational change. This thesis introduces AI, discusses its history, and describes the history of change efforts within the Navy. The

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thesis documents events leading up to and including the “Leadership Summit,” to include introduction of AI within the U.S. Navy and qualitative analysis of stories that address issues of leadership. It discusses Financial Management implications of implementing this process and describes using AI-LGIs within the strategic management process as a tool for facilitating rapid and collaborative organizational change within Marine Corps Logistics.

KEYWORDS: Appreciative Inquiry, Large Group Intervention, Change Processes, Leadership Summit, Summit, AI-LGI, Qualitative Analysis, ATLAS, Strategic Planning, 360 Degree Feedback, Performance Appraisals, Leadership, Leadership Development, Change, Change Efforts in the Navy

**REENGINEERING THE MARINE CORPS PROMOTION
PROCESS FOR UNRESTRICTED OFFICERS**

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and

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The Marine Corps manpower system has the responsibility of ensuring that the appropriate numbers of trained and experienced Marines are assigned to commanders to perform their missions. The main concern with the current manpower system is that there are many skills that are critically short while others exceed requirements. The questions that are addressed in this thesis are, “can and should the Marine Corps promotion system be restructured, redesigned, or replaced to fulfill the objective of properly structuring the force,” and “what would be the policy implications, unintended consequences, and pros and cons of promoting officers by MOS?” The authors explored the issue by first taking a detailed look at the history, statutory basis, and operation of the Marine Corps officer promotion system. The authors then examined the history, statutory basis, and operations of the officer promotion systems of the Navy, Army and Air Force to understand if their promotion systems were engineered to deal with force structuring concerns. The authors conclude the thesis by discussing why restructuring the Marine Corps officer promotion system would not be the best alternative for the Marine Corps and then give recommendations on how the Marine Corps could better implement a force structuring option.

KEYWORDS: Promotion, Manpower Policy Issues, Requirements Determination, Manpower Supply

**AN ANALYSIS OF THE TRANSITION OF THE OBJECTIVE INDIVIDUAL COMBAT
WEAPON (OICW) FROM ADVANCED TECHNOLOGY
DEMONSTRATION TO ACQUISITION PROGRAM**

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The OICW is envisioned to be a lightweight, shoulder-fired weapon having a dual munitions capability and an advanced day/night fire control. The OICW is expected to provide substantial improvements in lethality over the predecessor rifle and carbine families of weapons. The Office of the Program Manager for Small Arms assessed the OICW Advanced Technology Demonstration (ATD) Process and program progress in 1998 and concluded the ATD process did not accomplish/address the actions that are necessary prior to entering Engineering and Manufacturing Development. This thesis examines how technology maturation could be improved to better improve similar, subsequent weapon systems from inculcating risk that endangers the program.

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KEYWORDS: Objective Individual Combat Weapon, Small Arms, Advanced Technology Demonstration, Weapons Acquisition, Best Practices

**A GUIDE TO SELECTING SOFTWARE METRICS FOR THE ACQUISITION OF
WEAPON SYSTEMS ANALYSIS OF DEPARTMENT
OF DEFENSE CUSTOMS POLICY**

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In order for DoD sponsored items to clear foreign customs, DoD employs a unique set of paperwork, Government Bills-of-Lading (GBL) that are different from that used in the commercial sector. The use of GBL allows duty-free passage of government sponsored shipments through foreign offices for delivery to U.S. Forces. USTRANSCOM issued the policies and regulations that govern Customs Clearance procedures for DoD sponsored shipments to deployed forces around the world. In compliance with the directive to “Adopt Best Business Practices” from the commercial sector, this thesis examines the policies and/or procedures currently in place that govern the movement of material in and through Foreign Customs Offices.

KEYWORDS: Defense Transportation Regulation, Customs Clearance, Policy