

MASTER OF SCIENCE IN MANAGEMENT

A CASE STUDY OF THE ADVANCED AMPHIBIOUS ASSAULT VEHICLE (AAAV) PROGRAM FROM A PROGRAM MANAGEMENT PERSPECTIVE

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Master of Science in Management-March 1999

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This research effort focused on the program management issues of the U.S. Marine Corps' Advanced Amphibious Assault Vehicle (AAAV) Program. The research answered the primary question of what were the critical program management decisions during the early phases of the program and how would an analysis of these decisions affect the future of the AAAV program. Interviews were conducted with key personnel from the AAAV Office and General Dynamics Land Systems. Additionally, program documents and other relevant literature was reviewed. The key findings of the research effort concluded that reducing technical risk early in program is critical; Program Managers (PMs) must influence system design as early as possible; physical collocation of Government and contractor personnel facilitates the implementation of Integrated Product and Process Development (IPPD) and Integrated Product Teams (IPTs); the use of IPPD and IPTs has helped the AAAV program but personnel need to be trained before implementation; adopting an evolutionary acquisition strategy will help prevent component obsolescence prior to fielding; and PMs should use special contracting provisions to incentives contractors to reduce total ownership costs.

DoD KEY TECHNOLOGY AREA: Other (Acquisition)

KEYWORDS: Marine Corps, Advanced Amphibious Assault Vehicle Program, AAAV, Program Management, Contracting, Major Defense Acquisition Programs, Integrated Product and Process Development, IPPD, Integrated Product Teams, IPTs, Evolutionary Acquisition Strategy, Collocation, Risk Reduction, Early Operational Assessment, Acquisition Reform

A REASSESSMENT OF ARMY PROGRAM MANAGER COMPETENCIES

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This thesis sought to identify those personal characteristics (competencies), which are most critical for Army Program Managers (PMs) to be successful in today's DoD acquisition environment. Follow-on research to Defense Systems Management College (DSMC) and NPS PM job competency studies was conducted. A similar research methodology was used to analyze the same 27 competencies. A Revised PM Competency Model was developed from the survey data obtained from 39 "outstanding" Army PMs. The model contains 16 competencies, including nine identified as "most important" for PMs to possess. The three most important competencies were "Long Term Perspective," "Innovativeness," and "Political Awareness." "Professional Expertise," "Strategic Influence," and "Innovativeness" have all become significantly more important over the last decade. "Political Awareness" and "Strategic Influence" were identified as areas needing additional development. Finally, the PM's ability to manage their "external environment" effectively continues to be vital to their success.

Based on these findings, the following recommendations are presented: Defense Acquisition University (DAU) schools should reassess curriculums to ensure critical competencies are being adequately addressed; a 4-6 week

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DoD PM Internship Program should be incorporated into the graduate level program management curricula at DAU schools. Implementation of these recommendations would enhance the DoD acquisition workforce through competency development of future PMs.

This thesis research provides the Acquisition Corps and future PMs with current insight into the competencies required for successful program management in DoD.

DoD KEY TECHNOLOGY AREA: Other (Research, Development, and Acquisition)

KEYWORDS: Competencies, Program Management, Acquisition Reform, Program Manager

AN EVALUATION OF THE IMPACT OF THE TARGET FORCE PLANNING MODEL (TFPM) ON THE MANPOWER PROCESS AT HEADQUARTERS, U.S. MARINE CORPS

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This thesis examines the Target Force Planning Model (TFPM). The Marine Corps has been using different generations of this model since 1971 to determine the target force by grade and primary military occupational specialty (MOS) while taking personnel overhead and billets not requiring a primary skill into consideration. Interviews were conducted with the contractor, model manager, and primary users. This thesis identifies and makes recommendations for improvements centered around four key themes that emerged from the analysis. They are the need for better integration of the model and processes within the manpower system, development of concrete measures of effectiveness, improved documentation, and an effective education program. The study suggests that while the results of the TFPM are satisfactory for the users, organizational refinements could possibly increase its effectiveness.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower Models, Target Force, Integration

COULD REALISTIC JOB PREVIEWS REDUCE FIRST-TERM ATTRITION?

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This thesis examines whether realistic job previews (RJPs) can be used to reduce the first-term attrition of Navy recruits. The methodology consists of a literature review in which previous RJP studies are examined for their relevance to military accession and training processes. The military's use of educational screens, trends and costs of first-term attrition, and labor market theories of turnover are discussed to provide a common frame of reference within which to view the person-job matching process and its consequences. In general, the literature suggests that RJPs are effective in reducing turnover and could result in long-term savings in recruiting and training sailors. However, there are also costs associated with the use of RJPs. These costs are primarily short-term, and include funding for development and implementation, as well as the potential for increasing recruiting costs through lower rates of job acceptance. Consideration must be given to whether the benefits of reduced attrition outweigh these costs. Recommendations for further research and a conceptual framework for an RJP are also provided.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Realistic Job Preview (RJP), Realistic Job Exposure, First-Term Attrition, Selection Criteria, Recruiting, Delayed Entry Program, Educational Screening, Recruit Training

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AN ANALYSIS OF VERTICAL INTEGRATION IN THE DEFENSE INDUSTRY AND ITS EFFECTS ON DOD ACQUISITION PROGRAMS

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The Defense Department established a Defense Science Board Task Force on Vertical Integration and Supplier Decisions to determine whether vertical integration had increased in the defense industry, its potential effects on defense products, and whether DoD's acquisition reforms may mitigate any harmful effects. The Task Force final report established the findings that major defense firms had increased their vertical capabilities and very little evidence was presented that vertical integration had created systematic problems for DoD products today. Although an insignificant amount of evidence was available to conclude that vertical integration of the defense industry was detrimental to the national defense of our nation, DoD managers do believe that vertical integration posed potential future concerns to DoD. The evidence of a more concentrated industry and a dwindling defense budget are two factors which contributed to this research into the effects of vertical integration on DoD's acquisition programs. Anticompetitive practices, such as stifling innovation, shutting out other subcontractors, and establishing a monopoly in several areas which limits competition in the defense industry, are reasons for DoD concerns. Although no systematic problems exist for DoD acquisition program managers, certain issues warrant being oversimplified.

DoD KEY TECHNOLOGY AREA: Material, Processes, and Structures

KEYWORDS: Vertical Integration, Defense Industrial Base, Merger, Acquisition Strategy, Competition

ANALYSIS AND EVALUATION OF THE ABILITY OF THE VOLUNTARY INTERMODAL SEALIFT AGREEMENT TO SUPPORT U.S. SEALIFT REQUIREMENTS DURING TWO NEARLY SIMULTANEOUS MAJOR REGIONAL CONFLICTS

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The Voluntary Intermodal Sealift Agreement (VISA) is an interagency agreement between the Department of Defense (DoD) and the Department of Transportation and represents a new level of cooperation between the Maritime Administration, DoD, and U.S. commercial shipping companies. VISA was formulated in the wake of sealift lessons learned during the Persian Gulf War of 1990 to 1991 and was approved by the Secretary of Defense on 30 January 1997 as a sealift readiness program. The purpose of VISA is to make intermodal systems, including ships, ships' space, and intermodal equipment and management services available to DoD as required to support emergency deployment and sustainment of U.S. military forces.

The President's National Security Strategy calls for the United States to be able to defeat adversaries in two distant, simultaneous major theater wars. According to DoD, VISA will provide adequate commercial sealift and intermodal capabilities, when combined with organic sealift assets, to provide sustainment in support of the National Security Strategy. This research examines the development of VISA, its implementation process, and analyses its ability to provide sufficient sealift in the event of two nearly simultaneous major regional conflicts.

DoD KEY TECHNOLOGY AREA: Surface/Under Surface Vehicles – Ships and Watercraft

KEYWORDS: Voluntary Intermodal Sealift Agreement, Maritime Security Act, National Security Strategy

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AN ANALYSIS OF FACTORS THAT INFLUENCE RE-ENLISTMENT DECISIONS IN THE U.S. ARMY

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The purpose of this thesis is to analyze factors that influence first-term re-enlistment decisions in the US Army. The data used for this thesis were taken from the U.S. Army Small Tracking File (STF) database and merged with Defense Manpower Data Center (DMDC) U.S. Army enlisted cohort files. The Army currently categorizes personnel into 10 broad characteristic groups based on gender, education, Armed Forces Qualification Test (AFQT) score category, and enlistment term. The scope of this thesis is limited to soldiers in the first characteristic group, commonly known as "C-Group 1." This characteristic group consists of men who enlist for a 3-year or 4-year term of enlistment, score at least at the 50th percentile on the AFQT, and possess at least a high school diploma. This group accounts for approximately one-third of all enlistees. This thesis specifically examined the demographic background and military experience characteristics of soldiers, eligible for reenlistment, from the 1990, 1991, and 1992 cohorts. Descriptive statistics, cross-tabulation analysis, and logistic regression were employed to analyze the data. Results suggest key influences on the re-enlistment decision are pay grade, family status, race, length of first-term enlistment, education, and AFQT category. Further research is recommended to analyze additional characteristic groups and cohorts. The re-enlistment model could be refined by incorporating economic variables from current Army personnel strength and economic projection studies.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Re-enlistment, Personnel Retention, Logistic Regression, High-Quality Soldiers

A STATISTICAL ANALYSIS OF THE DETERRENCE AND SUBSTITUTION EFFECTS OF THE MILITARY SERVICES' DRUG PREVENTION PROGRAMS

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This thesis measures the deterrence and substitution effects of the military's drug testing program. Data used is from the 1995 and 1980 versions of the Department of Defense "Survey of Health Related Behaviors Among Military Personnel" and the 1995 and 1979 versions of the "National Household Survey on Drug Abuse." The statistical analyses examine three separate but related topics: (1) the deterrence effect of the military's drug prevention program; (2) the possible substitution of legal for illegal substances; and (3) the role of selection bias in estimates of the deterrence effect.

The results indicate that the military's drug testing program is a deterrent to illicit drug use. The results also provide evidence that the military's drug testing program produces an unanticipated positive spill over effect of reducing heavy alcohol consumption. Lastly, results of our analysis indicate that there is no selection bias; individuals who are likely to choose military service would not be less prone to use illicit drugs than their civilian counterparts in the absence of the testing program.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower Policy Analysis, Illicit Drug Use, Alcohol Use

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THE USE OF INTERNET TECHNOLOGY IN NAVY RECRUITING: THE ONLINE RECRUITING STATION (ORS)

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The Navy's annual task of recruiting up to sixty thousand "high-quality" recruits has become more difficult in recent years. The primary objective of this thesis was to develop an Internet-based "mock-up" of an Online Recruiting Station (ORS) to benefit military recruiting. An ORS Web-site was created with the assistance of a contractor (and funding support from the Commander, Navy Recruiting Command). Several interactive elements were constructed as part of the ORS, including a wide range of linked Web pages for a "virtual recruiter" environment. A focus group of high school students was then assembled to evaluate the ORS "mock-up." Focus group participants were able to identify the purpose and concept of the ORS "mock-up." The participants appreciated many of the features of the ORS, and felt that it offered a "comfortable" alternative to dealing directly with a military recruiter. Further development of the ORS is recommended so that it may become fully integrated into the military's recruiting process.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Recruiting, Technology, Internet, Recruiter

A COMPARATIVE ANALYSIS OF NAVAL SURFACE RESERVE FORCE TRAINING AND THE RELEVANCE OF THE TRAINING AND ADMINISTRATION OF RESERVE (TAR) PROGRAM

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This thesis analyzes the shifting roles of Training and Administration of Reserves (TAR) officers, particularly in terms of the necessity of maintaining a separate community to manage Surface Reserve Force training. As the mission of the Naval Reserve becomes more integrated with the active forces, the requirement for full-time management of Surface Reserve Centers by TARs is questionable. The study describes closer reserve integration with the Fleet, and analyzes the current role and utility of the TAR program related to changes in training. An overview of the organizational structure and role of both the Naval Reserve and the TAR program through the Persian Gulf War is provided. Changes to the surface training program post-Desert Storm are addressed, as well as proposals for organizational structure changes. Conclusions regarding the value added of the surface TAR program include the following: the policy to maintain a Reserve Center in every state is problematic; the Surface Reserve Force's organizational structure and processes are inconsistent; and numerous management information systems and administrative procedures have created barriers to the active force's ability to readily identify reserve resources.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower Policy Issues/Special Studies, Training, Requirements Determination

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THE IMPACT OF THE U.S. ARMY'S ELIMINATION OF SUPPORT FOR THE M109A1-A4 ON THE CANADIAN ARMY: A STUDY IN ALTERNATIVE SOURCES OF SUPPLY

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This thesis examines the impact of the United States Army's elimination of support for the M109A1-A4 on the Canadian Army. The United States Army's Program Management Office for the M109 has determined support for the M109A1-A4 will be eliminated on 1 January 2000, including the Canadian Army's fleet of M109s. Prior to 1 January 2000, the Canadian Army must determine another source of repair parts for their M109 fleet. Two alternative sources of supply were analyzed and evaluated. They are: (1) Acquire repair parts through the NATO Maintenance and Supply Agency (NAMSA) and (2) Continue to use the remaining United States Army system and Canadian stocks and augment these stocks with other methods. The augmentation methods examined were the Simplified Nonstandard Acquisition Program (SNAP), Direct Commercial Sales (DCS), and Foreign Military Sales (FMS). Each of the two alternatives was analyzed based upon the needs of the Canadian Army and their capabilities. It was concluded that the Canadian Army should continue to use their existing stockages of repair parts with augmentation from FMS if the repair part is still supported by the United States Army and DCS if it is not.

DoD KEY TECHNOLOGY AREA: Other (Logistics, Supply Support)

KEYWORDS: Conventional Weapons, Logistics, Security Assistance

THE GLOBAL TRANSPORTATION NETWORK:

THE HEART OF IN-TRANSIT VISIBILITY

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The Persian Gulf War highlighted problems concerning in-transit visibility (ITV). The lack of in-transit visibility resulted in over 20,000 of 40,000 containers entering the theater of operations being opened, inventoried, resealed, and shipped back into the transportation system because the troops did not know what the contents were. There was also a lack of ITV coverage over troop movements throughout area of operations. As a result of the Persian Gulf fiasco, the United States Transportation Command, was given the responsibility for designing and providing a DoD-wide ITV system using the Global Transportation Network (GTN). GTN is an integrated database system that provides users with real-time in-transit visibility information, and C2 capabilities to facilitate transportation planning and decision making. This thesis examines how well GTN is performing in the area of in-transit visibility since becoming operational in August of 1997, especially compared with commercial tracking systems. The results of this research will provide valuable insights into the actual in-transit visibility capabilities of the GTN system. It will also enable future and current transportation managers in DoD to become more aware of the ITV capabilities of GTN as well as commercial systems that can further improve the Global Transportation Network's capabilities.

DoD KEY TECHNOLOGY AREA: Other (Transportation)

KEYWORDS: Global Transportation Network, In-Transit Visibility

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AN ANALYSIS OF DELAYED ENTRY PROGRAM (DEP) ATTRITION BY HIGH SCHOOL SENIORS

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In fiscal year 1998, the Navy missed its recruiting goal by about 7,000 people and the Army fell short by 800. The Delayed Entry Program (DEP) allows new recruits to delay their entry into active military service; and, when individuals already recruited drop out of the DEP, the manpower planning process becomes even more difficult. High school seniors account for a relatively large proportion of individuals who leave the DEP. The primary purpose of this research was to identify factors that explain why high school seniors drop out of the DEP in such large numbers. Multivariate data analysis was used on archival data files from the Defense Manpower Data Center for fiscal years 1990 through 1996 to identify factors that explain the high attrition rate of high school seniors. A data set from Commander, Navy Recruiting Command was also used to conduct multivariate analysis. Additionally, descriptive data analysis examined high school seniors who left the DEP by their race, gender, service, and other characteristics. The results show that high school seniors who are older, female, and in the lower enlistment test categories have a comparatively high probability of dropping out of the DEP. Recommendations are offered for further research in this area.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower, Personnel, and Training, DEP Attrition, High School Senior DEP Attrition

AN ANALYSIS OF COMMERCIAL RAILROAD CONGESTION AND ITS RESULTANT IMPACT ON FORT-TO-PORT TRANSPORTATION EFFORTS

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The United States Army is heavily dependent upon commercial railroad transportation assets for the movement of cargo and equipment from Continental United States (CONUS) installations to Seaports of Embarkation during unit mobilizations. With the withdrawal of forces from overseas installations, this dependence upon commercial rail assets has grown dramatically in the past few years.

Due to a series of consolidations and mergers, the CONUS rail infrastructure has reached full capacity and is straining to meet civilian demands for rail services. If an environment of congestion, resulting in unanticipated delays, were to develop anywhere within the CONUS rail infrastructure, the movement of military unit cargo and equipment in response to a crisis mobilization or deployment would be severely impacted.

This thesis examines the impact of rail congestion on U.S. Army crisis mobilization transportation efforts. Analysis and recommendations are provided to assist DoD planners in alleviating the impact of rail congestion on crisis transportation efforts.

DoD KEY TECHNOLOGY AREA: Other (Transportation and Logistics)

KEYWORDS: Defense Transportation System, Rail Transportation, Logistics, Mobilization, Congestion

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SEALIFT TRANSPORTATION IN A WORKING CAPITAL FUND ENVIRONMENT: RATE STABILITY WHEN WORKLOAD DECLINES

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This research presents statistical analysis of rates and volume for Military Sealift Command point-to-point ocean transportation billing rates, with conclusions about the stability and flexibility of the Working Capital Fund system in the ocean transportation context. The analysis tests the statistical validity of the assumption that rates increase when volume declines.

DoD KEY TECHNOLOGY AREA: Other (Transportation)

KEYWORDS: Sealift, Shipping, Transportation, Working Capital Fund

COMMERCIAL OVERSEAS TRANSPORTATION OF CONTAINERIZED AMMUNITION

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The TURBO CADS exercises, which started in 1994, began DoD's efforts to develop an overseas commercial containerized ammunition distribution system (CADS). From 1994 through 1997, these exercises developed the military's CADS but were only partially successful in using commercial ocean carriers for overseas shipment of containerized ammunition. This thesis examines how DoD has attempted to use the commercial transportation system to move containerized ammunition overseas. It identifies problems encountered during the TURBO CADS exercises, examines commercial business practices and regulations that cause difficulties, and makes recommendations for peacetime overseas movement of containerized ammunition.

DoD KEY TECHNOLOGY AREA: Other: (Commercialization, Containerized Ammunition Transportation)

KEYWORDS: Transportation Management, Overseas Commercial Containerized Ammunition Transportation

ALLOCATION OF RECRUITING RESOURCES ACROSS NAVY RECRUITING STATIONS AND METROPOLITAN AREAS

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The purpose of this thesis is to explore the effects of the geographic location of recruiters and recruiting facilities on Navy enlistment supply. Recent shortfalls in goal attainment have spurred the call for additional recruiting resources, especially recruiters, at the national level. Past research which has been conducted at the Navy Recruiting District level has shown this to be cost effective as a means of achieving recruiting goals. However, the allocation of these resources across the 31 Navy Recruiting Districts must be made based on the characteristics of each district,

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and recruiters must be placed in geographic locations where their contributions to goal attainment are the greatest. This research constructs Navy recruiting station and metropolitan area-level contract production models to estimate the effect of the geographic placement of recruiters and facilities. In addition, we address the issue of competition between Army and Navy recruiters. By estimating production models at lower levels of aggregation we are able to examine the relative effects of recruiters and facilities and to predict the most efficient allocation of these scarce resources.

DoD KEY TECHNOLOGY AREA: Other: (Recruiting)

KEYWORDS: Recruiting, Enlistment Supply, Marginal Productivity of Recruiters, Fixed Effects

THE PERSPECTIVES AND EXPERIENCES OF BLACK FEMALE NAVAL OFFICERS

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This thesis addresses the reasons why Black female officers joined the Navy and their attitudes toward continued service. Twenty in-depth interviews were conducted in Monterey, CA and Washington, DC. All interviews were taped and then transcribed. Ten general themes were developed as a result of the interviews. These themes covered topics such as reason(s) for joining, experiences while in the Navy, concerns about recruitment of minorities, perceptions about racism, perceptions of inequitable treatment, feelings about being "the only one." A number of conclusions were drawn from the research, which revealed a need for continued understanding of the problems and issues confronting Black female Naval officers. This thesis ends with recommended courses of action that may help with recruitment and retention of Black female Naval officers.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Black Female Naval Officers, Minority Recruitment, Race in Military, Population Representation

ANALYSIS OF THE PERCEPTIONS OF TRAINING EFFECTIVENESS OF THE CRUCIBLE AT MARINE CORPS RECRUIT DEPOT, SAN DIEGO

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This thesis examines the Crucible event at Marine Corps Recruit Depot. At the direction of the Commandant of the Marine Corps, the Crucible was added in December 1996 as a new training event to Marine Corps recruit training. This study focuses on the perceptions of the Recruit Training Regiment's drill instructors and officers regarding the training effectiveness of the Crucible. Structured interviews and discussions were conducted with Marines from Marine Corps Recruit Depot, San Diego and five main themes emerged. Additionally, the Crucible was analyzed based on current training methods and theories. Results showed that the Crucible is effectively reinforcing the teachings of teamwork and core values; is an effective rite of transition; is effectively using Marine Corps history and symbols; is teaching combat decision making skills; and has the proper level of difficulty for new recruits. The study findings suggest that the Crucible is an effective training event, its methods are sound, and it is a defining moment of a recruit's initial training experience.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Crucible, Recruit Training, Marine Corps

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**THEATER HIGH ALTITUDE AREA DEFENSE (THAAD)
RADAR: EXAMINATION OF A COST SAVING INITIATIVE**
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This thesis analyzes two acquisition reform initiatives that made Theater High Altitude Area Defense (THAAD) Radar Product Office's Best of Breed Transmit/Receive Module study a success and examines the risk involved in the pursuit of this study. The initiatives are Cost as an Independent Variable (CAIV) and commercial items in the form of dual-use technology. Analysis of the radar subsystem of THAAD reveals a major cost driver to be the transmit/receive (T/R) module in the antenna equipment. The Best of Breed study examined techniques in the design, engineering, and manufacturing of these modules and its components in order to aggressively reduce the unit cost. Using tenets of CAIV, THAAD Radar Product Office was able to define a study such that the contractor would recommend a low risk solution to achieve cost reductions of almost 50% for the module. Additionally, the Product Office was able to accomplish this without sacrificing performance or schedule. The commercial application of the T/R module was an important factor in motivating the contractor to seek aggressive cost reductions. Lessons from this case may be applicable to other programs seeking to reduce cost.

DoD KEY TECHNOLOGY AREAS: Sensors, Conventional Weapons

KEYWORDS: CAIV, THAAD Radar

**U.S. ARMY RECRUITER INCENTIVES: COMPARISON,
EVALUATION, AND POSSIBLE ALTERNATIVES**
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Second Reader: Cary Simon, Department of Systems Management

This thesis examines the current recruiter incentives used by all four military services to help identify if any best practices exist that could be incorporated by United States Army Recruiting Command (USAREC.) Due to the challenging recruiting environment in the late 1990s, meeting accession goals has become increasingly difficult. Efforts to increase recruit accessions have included increased budgets for advertising, bonuses, and the number of recruiters. In an effort to explore less costly initiatives to increase accessions, the USAREC is looking into improving recruiter productivity through improvements to their current recruiter incentive program.

Findings from this study indicate that most of the similarities in awards given to recruiters are for individual point or mission achievement among all services. The Navy places the most emphasis on the team concept, while the other services focus more on individual performance. The recruiter of the year is an award category strongly emphasized by top leadership in all services. Findings also indicate the Army and the Navy reward recruiters for reducing recruit attrition through graduation from bootcamp and the Navy and Marine Corps recognize a special category for superior performance. In general, current incentives appear to motivate some recruiters to increase performance. However, identification of best practices requires a model of recruiter behavior along with empirical estimates that would indicate how recruiter behavior responds to various factors, including current and alternative incentives.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Awards, Incentives, Recruiting

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TRAINING COSTS FOR SURFACE WARFARE OFFICERS

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Current Surface Warfare Officer (SWO) retention is well below the level needed to staff Department Head billets in the Fleet. The Navy is developing career incentive pay to stem the flow of SWOs leaving the Navy and increase community retention. The purpose of this thesis is to capture the training costs of junior Surface Warfare Officers that occur between commissioning and qualifying as a SWO. This thesis also explains the economic theory of specific training and its relevance to the wage streams offered to SWOs. This thesis estimates the training cost of qualifying a SWO to be \$80,194.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Surface Warfare Officer, Training, Retention, Cost

ANALYSIS AND EVALUATION OF THE DEPARTMENT OF DEFENSE'S SHIFT FROM MOTOR CARRIER TO RAIL MOVEMENTS OF AMMUNITION WITHIN THE CONTINENTAL UNITED STATES

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The Department of Defense relied heavily on commercial transportation for both unit deployment and ammunition sustainment during Desert Shield/Desert Storm. Nearly 70 percent of all ammunition was carried by commercial truck companies.

The Mobility Requirements Study (MRS) and Mobility Requirements Study Bottom Up Review Update (MRS BURU) identified transportation requirements for mobilization in response to a Major Regional Contingency (MRC). There are many issues and concerns within both industry and DoD that can be identified as factors affecting readiness, such as declining numbers and sizes of railcars and insufficient Container Handling Equipment at ammunition depots. These factors and others risk DoD's ability to deploy ammunition rapidly in response to contingencies and conduct efficient day-to-day operations. Many of these factors stem from the way DoD does business, the changing industry environment, and inconsistent peacetime versus wartime operational requirements.

This thesis analysis factors affecting modal combination decisions as well as the current and future viability for transporting DoD's arms, ammunition, and explosives.

DoD KEY TECHNOLOGY AREA: Other (Transportation and Logistics)

KEYWORDS: Transportation, Ammunition, Logistics

AN ANALYSIS OF THE EFFECTS OF DEPLOYMENT ON TURNOVER IN THE UNITED STATES ARMY RESERVE

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This thesis addresses Army Reserve post-deployment turnover. Fifty-two prior Army Reservists who left the Reserves after their deployment were questioned in semi-structured telephone interviews. Survey questions were

developed using motivation and turnover theories, and an Integrated Turnover Model relating a Reservist's deployment experience to the presence or absence of six major factors: involvement, demotivators, equity, reinforcement, reward relevance, and goals. Deficiencies were found in all six areas, with the most influential and interconnected determinant of post-deployment turnover stemming from poor leadership. Other commonly cited examples included: lack of timely deployment information, inefficient distribution of Reserve manpower, and inequitable treatment of Reserve by active members. Recommendations to reduce turnover include: revamp the Reserve officer leadership training and education program to emphasize exemplary moral behavior on the part of Reserve officers, straightforward communication of deployment dates, balance manning plans, and consider deploying Reservists from home sites.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower, Personnel, and Training, Army Reserve, Turnover

THE IMPACT OF REGIONAL ECONOMIC CONDITIONS ON RECRUITING

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The objective of this study is to examine the impact of county-level economic conditions on the recruiting market for the U.S. Armed Forces. This thesis establishes and analyzes the relationship between various demographic variables and recruiting at the county-level. Previous research in this area has dealt with data from various sources and at an aggregated level. It has looked across states, and across time periods, with some studies mixing data on the pre-All Volunteer Force era with data from the All Volunteer Force era. Much of the prior research examines a demand issue by looking at those who have already entered military service. This study examines data on individual military applicants. The data on applicants was provided by Defense Manpower Data Center for a three-year period, 1993-1995. The individual applicant data is then aggregated to the county-level for analysis and county characteristics are used to explain the variation in applicants across counties. This study is the first to examine the applicant file.

DoD KEY TECHNOLOGY AREA: Manpower, Personnel, and Training

KEYWORDS: Manpower, Personnel, and Training

EVALUATION OF HIGH SPEED SEALIFT FOR UTILIZATION BY DEPARTMENT OF DEFENSE

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High speed ferries (HSFs) are currently operating throughout the world today. These ships employ technology that allows them to travel between 50 and 70 knots, while carrying up to 1,500 passengers and 375 vehicles. The technology used in these HSFs is constantly changing allowing for designs that are larger and faster.

The technology used in these HSFs is currently being developed for use on new High Speed Sealift (HSS) ship designs for the purpose of carrying commercial cargo on trans-oceanic routes. Commercial industry is looking to the Federal Government, and in particular the Department of Defense, for financial assistance in the further research and development of these HSS ships.

The objective of this thesis is to evaluate the opportunity available to the Department of Defense to stimulate the development and commercial use of HSS ships. If these ships prove to be technically and commercially successful, they could provide a powerful advantage to the U.S. transportation industry and, at the same time, have a

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major impact on U.S. military capabilities. The goal is to determine if the HSS technology will provide a significant increase in military capability to warrant investment in commercial HSS research and development.

DoD KEY TECHNOLOGY AREA: Surface/Under Surface Vehicles – Ships and Watercraft

KEYWORDS: High Speed Sealift, Sealift, Operation Desert Shield/Desert Storm, Operation Restore Hope

ARMS TRANSFERS TO VENEZUELA: A COMPARATIVE AND CRITICAL ANALYSIS OF THE ACQUISITION PROCESS (1980-1996)

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Certain aspects of the Venezuelan acquisition process for arms from 1980-1996 may have contributed to bribery and corruption, thus making both Congress and the Venezuelan populace highly skeptical of requests for weapon acquisitions.

This thesis, a comparative and critical analysis, examines the Venezuelan acquisition process from 1980 to 1996, using the highly structured U.S. acquisition model as a benchmark for comparison. The analysis traces the complex acquisition process in both countries from the initial request for materiel until the acquisition is made and the product is employed. This thesis further describes the Venezuelan and the U.S. processes by using four frameworks: institutional, regulatory, organizational and the process itself. This description also entails economic, social, and political factors that influence the procurement process.

Many differences in the processes, such as the country's resources and the size of its armed forces, are described. Other important differences are the facts that, unlike the U.S. Congress, the Venezuelan Congress has a limited role in the procurement process, and unlike the U.S., the Venezuelan President exerts supreme control, including economic control, over the Armed Forces. The thesis proposes that Venezuela would benefit by adopting the practices of the U.S.

DoD KEY TECHNOLOGY AREA: Other (Acquisition Management)

KEYWORDS: Acquisition Process, Defense Procurement, Arms Transfer, Weapon Acquisitions

CVX DAMAGE CONTROL INFORMATION TECHNOLOGY EVOLUTIONARY MODEL

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Tightening of the U.S. defense budget has been closing in around the twelve aircraft carrier Navy throughout the 1990's. In spite of this budget decline, the quantity and quality of our most expensive weapons, the aircraft carriers, have remained stable over the same period. These six thousand-man ships, however, could soon become unwanted remains of the days of a 600-ship navy when recruiting was easier and manpower was less expensive. Damage control operations aboard the carrier require the greatest quantity of manpower of any single operational requirement. The next generation of carriers promises to be just as large and more diverse in mission than the current design. Without an infusion of sound technological advancements, the quantity of manpower required to protect these new carriers threatens to reduce the twelve-carrier Navy to a more affordable number. The goal of this thesis is to establish a "technology roadmap" by which CVX can avoid where possible and negotiate where necessary, the changes in state of the art damage control technology. A deliberate and technologically sound process for improving the damage control capabilities aboard future and existing aircraft carriers is possible. A strong investment in information technology planning will play a major part in optimizing capabilities and

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manpower requirements of CVX. The reward will be improved robustness, efficiency, and quality of life, keeping the next generation of aircraft carriers a truly labeled "high value unit."

DoD KEY TECHNOLOGY AREA: Command, Control, and Communications

KEYWORDS: Distance Learning, Decision Support Systems, Software Process Improvement

THE ROLE OF SELECTION BIAS IN ESTIMATES OF THE DETERRENCE EFFECT OF DRUG TESTING: EVIDENCE FROM THE NATIONAL LONGITUDINAL SURVEY OF YOUTH

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Substance abuse in the military has serious and costly consequences. The aim of this research is to quantitatively measure the deterrence effect of the military's drug testing and "zero tolerance" policies. A second purpose is to statistically measure the degree to which selection bias may explain the deterrence effect associated with the military services' drug testing policy. Additionally, this thesis investigates the propensity of service members to substitute legal drugs or alcohol for illicit drugs as a result of drug testing.

The results indicate the military's drug prevention policies do have a substantial effect on service members' drug use behavior. The evidence also suggests that self-selection of applicants to the military does not significantly reduce the magnitude of the estimated deterrence effect. However, the results also suggest that there may be an unintended consequence of these policies in the form of military members substituting legal drugs such as alcohol for illegal drugs.

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

KEYWORDS: Manpower Policy Analysis, Demographic Modeling, Illicit Drug Use, Alcohol Use