

# MASTER OF SCIENCE IN MANAGEMENT

---

## MEASURING SUCCESS: METRICS THAT LINK SUPPLY CHAIN MANAGEMENT TO AIRCRAFT READINESS

**William G. Balestreri-Major, United States Marine Corps  
B.S., Old Dominion University, 1992**

**Master of Science in Management-September 2002**

**Patrick S. McDoniel-Captain, United States Marine Corps  
B.S., United States Naval Academy, 1993**

**Master of Science in Management-September 2002**

**Advisor: Donald R. Eaton, Graduate School of Business and Public Policy**

**Second Reader: Keebom Kang, Graduate School of Business and Public Policy**

This thesis evaluates and analyzes current strategic management planning methods that develop performance metrics linking supply chain management to aircraft readiness. Our primary focus is the Marine Aviation Logistics Squadron. Utilizing the Logistics Management Institute's *DoD Supply Chain Implementation Guide* and adapted SCOR model, we applied the six-step process for developing a strategic logistics management plan for implementing supply chain management for use at the MALS, and subsequently defined the interdependencies of the Naval/Marine Corps Aviation Logistics Supply Chain. The Theory of Constraints proved to be a viable tool for establishing aircraft readiness as the ultimate goal of Marine Corps aviation logistics, and provided a means for identifying and eliminating readiness constraints preventing the MALS from achieving its goal. MALS-14's successful implementation of a structured planning and feedback system based on the Theory of Constraints justifies the need for MALS strategic logistics management planning and supply chain management. Effective process-oriented performance metrics are not only critical for achieving a fully integrated supply chain, but also link supply chain management to the common goal of aircraft readiness, and provide the means to measuring supply chain performance improvements, identify readiness degraders, and elicit behavior from aviation logisticians to improve aircraft readiness.

**KEYWORDS:** Supply Chain Management, Aircraft Readiness, Operational Availability, Strategic Planning

## AN ANALYSIS OF SERIAL NUMBER TRACKING AUTOMATIC IDENTIFICATION TECHNOLOGY USED IN NAVAL AVIATION PROGRAMS

**Robert Csorba-Lieutenant Commander, United States Navy  
B.A., Washington State University, 1991**

**Master of Science in Management-September 2002**

**Advisor: William J. Haga, Graduate School of Business and Public Policy**

**Second Reader: Donald R. Eaton, Graduate School of Business and Public Policy**

The Government Accounting Office found that the Navy, between 1996 and 1998, lost \$3 billion in materiel in-transit. This thesis explores the benefits and cost of automatic identification and serial number tracking technologies under consideration by the Naval Supply Systems Command and the Naval Air Systems Command. Detailed cost-savings estimates are made for each aircraft type in the Navy inventory. Project and item managers of repairable components using Serial Number Tracking were surveyed as to the value of this system. It concludes that two thirds of the in-transit losses can be avoided with implementation of effective information technology-based logistics and maintenance tracking systems. Recommendations are made for specific steps and components of such an implementation. Suggestions are made for further research.

# MANAGEMENT

---

**KEYWORDS:** Naval Aviation, Automatic Identification Technology, AIT, Serial Number Tracking, SNT, Automatic Information System, AIS, NAVSUP, NAVAIR, Identification Technology

**AN ECONOMIC ANALYSIS OF ACQUISITION OPPORTUNITIES FOR THE UNITED STATES  
DEPARTMENT OF DEFENSE WITHIN THE JAPANESE DEFENSE INDUSTRIAL BASE**

**Eric B. Garretty-Major, United States Marine Corps**

**B.A., University of Mississippi, 1990**

**Master of Science in Management-December 2002**

**Primary Advisor: Raymond E. Franck, Department of Systems Engineering**

**Associate Advisor: David F. Matthews, Graduate School of Business and Public Policy**

The Japanese Defense Agency (JDA) and the Japanese Defense Industrial Base (JDIB) are in a transitory period. A recession in the Japanese economy and an increasing requirement for participation by the Japanese military in regional and global venues has placed unprecedented demands on the JDA. The Department of Defense also finds itself in a transformational period where implementation of acquisition reform initiatives is an imperative. Given this environment, this thesis seeks to provide DoD Program Managers with a baseline economic analysis of the Japanese Defense Industry and identify potential synergies in U.S.-Japan acquisition efforts. An exposition of the Japanese Defense Industry's composition and status and a targeted comparison to the U.S. defense firms frames the current acquisition environment. Economic factors at work in U.S.-Japan acquisition efforts are identified through examination of past and current acquisition interfaces such as the FS-X co-development program and the Theater Missile Defense program. Specific and general acquisition opportunities are discussed and an assessment tool for evaluation of collaboration alternatives is proposed. This thesis finds that acquisition opportunities do exist for DoD within the JDIB and optimization of these opportunities can facilitate the DoD's effort to engage in "best-value" acquisition practices.

**KEYWORDS:** Japanese Defense Agency, Japanese Defense Industrial Base, Acquisition, Total Ownership Cost Reduction

**ANALYSIS OF GENERAL ACCOUNTING OFFICE, ARMED SERVICES BOARD OF  
CONTRACT APPEALS AND FEDERAL COURT OF CLAIMS DECISIONS ON PROTESTS AND  
DISPUTES INVOLVING PERFORMANCE SPECIFICATIONS**

**Philip A. Murphy-Sweet-Lieutenant Commander, United States Navy**

**B. S., University of Idaho, 1991**

**M.B.A., Averett College, 1998**

**Master of Science in Management-September 2002**

**Advisor: CDR E. Cory Yoder, USN, Graduate School of Business and Public Policy**

**Second Reader: Ron B. Tudor, Graduate School of Business and Public Policy**

This thesis analyzed rulings and court cases from the General Accounting Office, Armed Services Board of Contract Appeals and Federal Court of Claims with respect to contract protests and disputes involving Performance Specifications.

Performance Specifications generally leave the contractor open to decide the best means to accomplish the work of a contract and deliver the product called for in the contract. As compared with Design Specifications, which tell the contractor exactly the processes and materials that must be used to accomplish the task, Performance Specifications only specify the final product to be delivered and the parameters it will fulfill or operate within, and thus leave the contractor open to decide the best processes and procedures to accomplish the task.

The use of Performance Specifications in the Defense acquisition process has been mandated from the Secretary of Defense since 1994. The intent in using Performance Specifications was to provide incentive to the contractor to become innovative and resourceful in performing the contract and hopefully, result in cost avoidances and savings to the Federal Government.

# MANAGEMENT

---

This thesis will examine protests and disputes from the above sources to evaluate the use of Performance Specifications to date and compile any patterns of success or failure that can then be passed on to today's acquisition workforce.

**KEYWORDS:** Performance Specifications, Federal Acquisition Process, GAO Comptroller General Decisions, Armed Services Board of Contract Appeals Decisions, U.S. Court of Federal Claims Decisions

**ENTERPRISE RESOURCE PLANNING (ERP): A CASE STUDY OF SPACE AND NAVAL  
WARFARE SYSTEMS CENTER SAN DIEGO'S PROJECT CABRILLO**

**Eric Oxendine-Lieutenant Commander, United States Navy**

**B.A., North Carolina University, 1992**

**Master of Science in Management-September 2002**

**Dean M. Hoffman, IV-Captain, United States Army**

**B.A., Lycoming College, 1991**

**Master of Science in Management-December 2002**

**Advisor: Lawrence R. Jones, Graduate School of Business and Public Policy**

**Second Reader: John Muttly, Graduate School of Business and Public Policy**

This thesis examines the Enterprise Resource Planning (ERP) pilot implementation conducted at the Space and Naval Warfare Systems Center San Diego (SSC-SD), the first of four Department of the Navy (DON) pilot implementations. Specifically, comparisons are drawn between both successful and unsuccessful ERP implementations within private sector organizations and that of SSC-SD. Any commonalities in implementation challenges could be applied to future ERP implementations in both the DON and Department of Defense (DOD).

The findings are based in part upon interviews and data collected. From the comparison, commonalities exist in ERP implementation challenges between private sector organizations and SSC-SD. Additionally the management techniques used to mitigate those challenges are similar. Finally, due to SSC-SD's financial management structure and appropriated funding constraints, unique obstacles were identified during the implementation. These unique obstacles will be encountered by other Working Capital Funded (WCF) organizations planning to implement ERP on the same scale as SSC-SD. This thesis supports that the implementation of ERP at SSC-SD was a success based on industry comparisons, the goals of Project Cabrillo's business case analysis (BCA), and its Chief Financial Officer (CFO) Act compliancy assessment, January 2002.

**KEYWORDS:** Enterprise Resource Planning, Financial Management, Project Cabrillo, Space and Naval Warfare Systems Center San Diego, SSC-SD

