NPS-HR-23-004

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Modernization and Process Improvement to the Marine Corps Supply Chain Management Officer's Training Curriculum

December 2022

Capt Dylan A. Globerman, USMC
Capt Nicholas M. Romer, USMC
Capt Aaron J. Roedl, USMC

Thesis Advisors: Dr. Mitchell J. McCarthy, Lecturer
E. Cory Yoder, Senior Lecturer

Department of Defense Management

Naval Postgraduate School

Prepared for the Naval Postgraduate School, Monterey, CA 93943

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

The research presented in this report was supported by the Acquisition Research Program of the Department of Defense Management at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact the Acquisition Research Program (ARP) via email, arp@nps.edu or at 831-656-3793.

Acquisition Research Program
Department of defense management
Naval Postgraduate School

ABSTRACT

In the wake of Force Design 2030 and the resulting widespread restructuring of the Marine Corps to better align with the challenges of the future, the requirement to address and modernize military occupational specialty training has become increasingly apparent. We sought to assess entry-level and follow-on training for supply officers and how it affects operational performance in the Fleet Marine Force. This thesis asks: does structural misalignment of training content for ground supply officers lead to suboptimization of operational performance and lower retention rates? To adequately address this question, we employed mixed-methodology research, utilizing both quantitative data analysis of audit results from units throughout the Marine Corps, and objective data gathered through use of questionnaire responses from company-grade supply officers who have recently completed or are currently completing their first operational tour. After analyzing the data, we identified shortfalls in current financial and procurement performance in both the quantitative and qualitative fields. Consequently, we provide recommendations and examples for improving the current process of training supply officers and identify potential additional training opportunities available to facilitate continuous improvement

THIS PAGE INTENTIONALLY LEFT BLANK

ABOUT THE AUTHOR

Capt Aaron Roedl Captain in the United States Marine Corps and resident student in the Acquisition and Contract Management 815 curriculum, currently in the last quarter in the Department of Defense Management. Served four years as a Supply Officer in the Marine Corps and now transitioning to become a Contracting Officer.

Capt Dylan Globerman Captain in the United States Marine Corps and resident student in the Acquisition and Contract Management 815 curriculum, currently in the last quarter in the Department of Defense Management. Served four years as a Supply Officer in the Marine Corps and now transitioning to become a Contracting Officer.

Capt Nick Romer Captain in the United States Marine Corps and resident student in the Acquisition and Contract Management 815 curriculum, currently in the last quarter in the Department of Defense Management. Served 16 years as an artillery enlisted Marine, then commissioned and served four years as a Supply Officer in the Marine Corps and now transitioning to become a Contracting Officer.

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

We would like to acknowledge and give thanks to the professionals at the Naval Postgraduate School (NPS) for hosting us and providing a quality graduate-level education and to the professors, faculty, and staff for going above and beyond to ensure we understood our assignments and had the foundation to execute this thesis in the most timely and professional way.

We would like to thank our thesis advisor, Mitch McCarthy, for his mentorship and guidance through this process and our second reader, Cory Yoder, for his insights and lavish contracting stories. The impact that these men have had on our group and NPS is extraordinary, and we could not have achieved this without their leadership and influence.

Finally, we would like to thank our families and our friends who supported us along the way. They provided much-needed encouragement when the light of success was bleak and dismal. They gave us the confidence to push through the various roadblocks we encountered. They were there for us every step of the way.

With the help of our advisors, friends, and family, we were able to identify a problem that could potentially cause a company to go out of business. We conducted our research, compiled and analyzed the data, and produced some viable and actionable solutions. We identified the need to focus on Marine Corps supply officers and their ability to execute and manage their budgets on behalf of the Department of Defense and the taxpayers. Our research really hits close to home as the three of us are all Marine Corps supply officers. We want to see the community continue to grow professionally, from entry-level training to intermediate-level training. We want to see supply officers continue to serve after their first fleet tour. We want to see timely change implemented at the military occupational specialty–producing school that facilitates the aforementioned items.

THIS PAGE INTENTIONALLY LEFT BLANK

NPS-HR-23-004

ACQUISITION RESEARCH PROGRAM
SPONSORED REPORT SERIES

Modernization and Process Improvement to the Marine Corps Supply Chain Management Officer's Training Curriculum

December 2022

Capt Dylan A. Globerman, USMC
Capt Nicholas M. Romer, USMC
Capt Aaron J. Roedl, USMC

Thesis Advisors: Dr. Mitchell J. McCarthy, Lecturer
E. Cory Yoder, Senior Lecturer

Department of Defense Management

Naval Postgraduate School

Prepared for the Naval Postgraduate School, Monterey, CA 93943

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

LIST OF FIGURES

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

CAP	Corrective Action Plan
CCRB	Course Content Review Board
DAI	Defense Agency Initiative
DOD	Department of Defense
ERPS	Enterprise Resource Planning Systems
FLIPL	Financial Liability Investigation of Property Loss
FMF	Fleet Marine Force
FSMAO	Field Supply and Maintenance Analysis Office
GAO	Government Accountability Office
GCPC	Government Commercial Purchase Card
HQMC	Headquarters, U.S. Marine Corps
IT	Information Technology
IQR	Intermediate Quartile Range
LOC	Letter of Continuity
LRE	Logistics Readiness Evaluation
MARADMIN	Marine Administration
MOS	Military Occupational Specialty
MSE	Major Subordinate Element
NFR	Notice of Findings and Recommendations
OJT	On the Job Training
POI	Period of Instruction
RCO	Regional Contracting Office
SABRS	Standard Accounting Budget Reporting System
SCMOC	Supply Chain Management Officer's Course
SL3	Standard List 3
SME	Subject Matter Expert
TECOM	Training and Education Command
TMCM	Technology-Mediated Change Management
UAC	Unauthorized Commitment of Government Funds

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

In the Marine Corps commandant's *Force Design 2030*, General Berger explicitly stated that the future of the Marine Corps will be in performing expeditionary amphibious missions in the Indo–Pacific region with a focus on disaggregated operations (Berger, 2020). This dramatic shift in focus from counterinsurgency doctrine presents a new set of challenges the Marine Corps will have to face, including the requirement for a high-performing supply chain management system that can support disaggregated forces. The Marine Corps's current supply chain management training pipeline does not support the accomplishment of this requirement (Irion, 2020; Lawless, 2018; Mindeman, 2022). Currently, the training doctrine for supply personnel is an antiquated system that does not train to new auditability requirements or provide follow-on training for evolving policies and procedures (Lawless, 2018; Mindeman, 2022). This process leads to supply chain discrepancies, audit failures, and an overall decrease in operational readiness throughout the Marine Corps (Government Accountability Office [GAO], 2022; Grady, 2021; Serbu, 2022). To address this issue, the Marine Corps's deputy commandant for installations and logistics (DC I&L) should examine the discrepancy between supply chain management doctrine taught and changing requirements due to shifting priorities following 20 years of war and a focus on auditability at the using-unit perspective.

To understand this issue, it is important to understand the breadth of a Marine Corps supply officer's responsibilities. The list of responsibilities for a supply officer is too lengthy to list here, but the full list of responsibilities is available in the Appendix, Section B (U.S. Marine Corps, 2018b).

A. PROBLEM STATEMENT

The U.S. Marine Corps (2018a) *Fiscal Year 2018 Financial Management Report* identifies systemic weaknesses in their supply chain and financial management sectors, including financial reporting, property accountability, internal controls, and funds management. The lack of auditability in the Marine Corps is a symptom of a more widespread Department of Defense (DOD) issue of poor auditability (Bublé, 2021; GAO, 2022; Gnanarajah, 2019). To improve auditability, the Marine Corps, under the direction

of the DOD, delegated more financial management functions and requirements to the operational unit level, placing these responsibilities squarely on the supply officer (Lawless, 2018). Despite the increased financial management responsibilities, however, supply shops struggle and frequently fail various functional areas of the Field Supply and Maintenance Analysis Office (FSMAO) audit and the Logistics Readiness Evaluation (LRE), which make up the auditability standards throughout the Marine Corps and occurs at the unit level as biannually audits (Irion et al., 2022). One explanation for this widespread shortcoming is due to entry-level Marine Corps supply chain management training focusing on using unit-basic requisitioning and property accountability versus integrated supply chain and financial management to support an operational environment (Irion, 2020; Lawless, 2018; Mindeman, 2022). The weaknesses identified in the *Fiscal Year 2018 Financial Management Report* (U.S. Marine Corps, 2018a) and in recent FSMAO audit results seem to highlight a requirement to overhaul the current training processes for supply chain management professionals throughout the Marine Corps.

B. PURPOSE STATEMENT

The purpose of this mixed-methodology research is to identify and provide evidence of shortfalls throughout the Marine Corps from 2020 to 2022 and recommend improvements to entry-level and follow-on training for company-grade supply officers to prepare them for success. Our findings discern if modernizing, or merely updating, the current training doctrine and developing follow-on training opportunities will enhance mission readiness as well as improve retention of company-grade supply officers, thereby aligning training and development with the goals of *Force Design 2030*.

C. RESEARCH QUESTION

During this study, we address one key question that guides the conduct of research. The question is focused on identifying the effectiveness of maintaining current training doctrine, culminating in the analysis of how the current training pipeline has affected retention and operational effectiveness of experienced supply chain management officers throughout the Marine Corps. The research question is presented in Figure 1.

Does the structural misalignment of training content for ground supply officers lead to suboptimization of operational performance and to lower retention rates?

Figure 1. Research Question

D. HYPOTHESIS

The goal of this thesis is to influence modernization of the current supply chain management training doctrine into a more agile, up-to-date curriculum that centers around contingency operations and rapid procurement to support *Force Design 2030*. To that end, we offer the two hypotheses in Figure 2.

H1: A lack of agility in supply officer training curriculum content creates shortfalls in operational performance.
H2: Shortfalls in operational training contributes to lower retention rates among supply officers.

Figure 2. Hypotheses

E. METHODOLOGY

After analyzing the complexity of the research question, we agreed that a mixed-methodology approach that relies on both quantitative analysis of data points received from supply accounts throughout the Marine Corps and a qualitative assessment of the effectiveness of today's supply chain management training pipeline based on questionnaires provided to both active-duty and reserve company-grade supply officers would be most effective. The data results from the quantitative analysis, measured against questionnaire results, could reveal a gap in training leading to a frictional experience by most officers. The use of a both qualitative assessment and quantitative analysis intend to provide convincing evidence that improvements in the current doctrine may dramatically improve performance and job satisfaction for supply officers throughout the Marine Corps.

F. SCOPE

The scope of this research targets operational performance and retention effects of supply officers who attended the Supply Chain Management Officer's Course (SCMOC)

between 2017 and 2021. The quantitative research consists of a trend analysis of operational units' FSMAO and LRE audit results. Data points for supply chain management performance most accurately reflect the training and ability of the supply officers conducting their duties within the regional commands, while other metrics such as key performance indicators could easily be from errors in the accounting software and other external factors, thereby negating their usefulness for this study. The qualitative assessment for this study provides questionnaires to company-grade supply officers throughout the active-duty Marine Corps, requesting their feedback and input on the current training pipeline. The questions focus on the responses of supply officers as to whether their military occupational specialty (MOS) training was sufficient, how it impacted their operational performance, and if it had an impact on their retention. This feedback from supply officers in the active forces, accompanied by quantitative data analysis, contextualizes and allows determination of the current training effectiveness. The combination of these data sets allows for the offered hypotheses to be tested.

G. BACKGROUND

As the DOD continues to improve auditability throughout the armed services, several changes and new requirements have been disseminated to all operational units throughout the Marine Corps (Berger, 2019; U.S. Marine Corps, 2020b). Some of these changes include, for example, increased audibility standards and frequencies (Field Supply and Maintenance Analysis Office–West [FSMAO-W], 2022). Another example is the implementation of the Defense Agency Initiative (DAI), which serves as the DOD's new general ledger and is supposed to be an all-in-one replacement for most commercial procurement and requisitioning software (Defense Logistics Agency [DLA], 2022; Homeland Security Today; 2022; Stippey, 2021). The increased auditability requirements for each unit fall on the command's supply officer to manage, who is often a young second lieutenant who has just graduated SCMOC and has no background in business finance, no operational experience, and has little training or education in the relevant subject matter. As such, these young supply officers rely heavily on their knowledge gained from SCMOC, DC, I&L and Training Command.

SCMOC is the MOS training for Marine Corps supply officers and is intended to prepare future supply officers to be successful once they enter the fleet (U.S. Marine Corps, 2019). SCMOC provides 56 training days of curriculum that handles many different areas, including property management, personal effects, budget and financial management, procurement procedures, and combat service support (Mindeman, n.d.). Over the past 20 years, a supply officer's primary focus in the Marine Corps has revolved around property accountability, and that emphasis is shown in the amount of training days dedicated to the subject in the SCMOC curriculum (FSMAO-W, 2022; Lawless, 2018; Mindeman, n.d.). In recent years, however, supply officers' budget and financial management responsibilities have increased (FSMAO-W, 2022; Lawless, 2018; Mindeman, 2022; U.S. Marine Corps, 2020a). More rigorous procurement procedures are being implemented yearly that have not been reflected in the SCMOC training schedule, despite increasing DOD auditability standards (Chappell, 2017; Lawless, 2018; Mindeman, 2022). For example, DAI was implemented service-wide in October 2020 and, over 2 years later, SCMOC is still training new supply officers to use DAI's predecessor, Standard Accounting and Budget Reporting System (SABRS), which is no longer in use anywhere in the Marine Corps (DLA, 2022; FSMAO-W, 2022; Mindeman, 2022; Stippey, 2021). Considering how faithfully new supply officers rely on their initial training at SCMOC, Training Command should be significantly concerned with the amount of new operational requirements being placed on supply officers.

H. ORGANIZATION OF STUDY

Chapter II provides a literature review of different theories and methods to implement change in an organization and brings to light best practices that can be used by the Marine Corps to smoothly implement new processes and procedures. We selected readings based on their relationship to supply chain management, fiscal policy, budget execution, entry-level training, national strategy, and DOD directives. Chapter III presents the data collection processes, methodology, and an analysis of the information gathered to identify the problem and answer the primary research questions. Chapter IV contains the analysis and findings of the data collected and provides a summary of results

that ties the qualitative and quantitative analyses together. Chapter V includes the final conclusions, recommendations, and the proposals for future research on the topic.

II. LITERATURE REVIEW

In this chapter, we review an array of journal articles, books, historical theses, and relevant reports that provide an overview of financial management problems surrounding the DOD in general and the Marine Corps specifically, and how to smoothly implement organizational change. There is an abundance of research that identifies a significant problem within the DOD and the Marine Corps regarding financial management (Bublé, 2021; Chappell, 2017; Gnanarajah, 2019; GAO, 2022; Mehta, 2018; U.S. Marine Corps, 2018a). By collecting and analyzing these references, we provide a valid foundation for the problem analysis.

A. PROBLEM IDENTIFICATION

All federal agencies are required under the Chief Financial Officers Act (CFO Act) of 1990 to conduct financial audits in support of transparency in government spending (Chief Financial Officers Act, 1990). However, this was not implemented within the Pentagon until 2018 (Chappell, 2017; Maucione, 2018; Mehta, 2018; Stone & Ali, 2018; Yang, 2018). Before 2018, the DOD had never undergone a complete financial audit (Chappell, 2017; Maucione, 2018; Mehta, 2018; Stone & Ali, 2018; Yang, 2018), despite currently possessing $1.94 trillion in budgetary resources, or 15.2% of the Fiscal Year (FY) 2022 federal budget (USASpending.gov, n.d.). In 2017, Congress implemented 10 U.S. Code § 240a, stating that a full audit of the Pentagon is required to be performed annually to enforce proper accounting procedures within the DOD (10 U.S.C. § 240a, 2020).

In 2018, the DOD conducted its first comprehensive audit of the entire organization—with unsatisfactory results (Bale, 2021; Gnanarajah, 2019; Mehta, 2018). Pentagon auditors reported 2,377 notices of findings and recommendations (NFRs), including 20 agencywide and 129 component-level material weaknesses (Gnanarajah, 2019). Of the 2,377 NFRs, 48% were categorized as financial management systems and information technology, 30% as financial reporting, and 16% as property (Gnanarajah, 2019). Despite the corrective action plans (CAPs) required by Congress to solve the identified NFRs, the DOD again failed its comprehensive audits in 2019, 2020, and 2021

(Bublé, 2021; Serbu, 2022; Stone, 2021). When assessing the lack of improvement in the 28 material weaknesses and four significant deficiencies identified in the 2021 DOD audit, the Office of Inspector General reported that, "25 material weaknesses and two significant deficiencies were repeated from FY 2020, two significant deficiencies from FY 2020 were upgraded to material weaknesses, 1 new material weakness and 1 new significant deficiency were reported, and 1 material weakness from FY 2020 was downgraded to a significant deficiency" (Office of the Undersecretary of Defense, 2021, p. 13). With a clear lack of improvement in audit performance since 2018, Congress continues to increase pressure on the DOD to improve its auditability (Bublé, 2021; Chappell, 2021; Sanders, 2021). In May 2021, Congress introduced a bipartisan bill entitled, "Audit the Pentagon Act," which will financially penalize DOD components for continuing to fail audits (Audit the Pentagon Act, 2021; Bublé, 2021; Chappell, 2021; Sanders, 2021). The increased pressure from Congress is driving the Pentagon to improve its auditability as quickly as possible but repeat discrepancies and deficiencies highlight a need for continued improvement.

In concert with other components of the DOD, the Marine Corps DC I&L has directed the organization to improve its auditability (Berger, 2019; U.S. Marine Corps, 2020b). An example is the increased reliance on stringent internal control measures, such as the FSMAO and the LRE (U.S. Marine Corps, 2013). FSMAO and LRE are Marine Corps internal audit programs, managed by the various Marine Expeditionary Forces (MEFs) and Major Subordinate Elements (MSEs), that assess property accountability, requisitioning, fiscal and commercial procurement, among other categories, to ensure compliance with laws and regulations (Irion et al., 2022; U.S. Marine Corps, 2013). FSMAO and LRE audit requirements for operational units are constantly updated to ensure alignment with "future iterations of comprehensive analyses" (Irion et al., 2022, p. WE11) that the DOD is enforcing component-wide.

Additionally, the Marine Corps has moved to modernize their financial management systems per recommendations provided by the GAO (2022). In October 2020, the Marine Corps became the first DOD component to adopt the DAI, which replaced SABRS as the new financial reporting software for the Marine Corps (DLA, 2022; Homeland Security Today, 2022; Stippey, 2021). DAI aims to serve as an all-

inclusive budgeting reporting system, procurement software, and source document repository, combining multiple software programs into one (DLA, 2022; Homeland Security Today, 2022; Stippey, 2021). The Marine Corps's intent with DAI is to meet federal financial management system requirements required as prescribed by the CFO Act of 1990 (GAO, 2022).

Over the past 5 years, the FSMAO audit requirements have dramatically increased in size for financial management and commercial procurement, to now include audit requirements from the Internal Controls and Audit Readiness Team (ICART; FSMAO-W, 2022). Standards have dramatically increased as well, with CAPs now required for any financial management or procurement audits with less than a 97% score, compared to the 80% requirement from 2017 (FSMAO-W, 2022). Financial management system requirements have increased as well, with supply officers now required to have system access for at least 10 different financial management, procurement, or property management systems. As operational requirements change for units and supply officers to support auditability, the Marine Corps should assess what changes in policy, doctrine, and training are needed to support this mission going forward (Irion et al., 2022; Mindeman, 2022).

B. ORGANIZATIONAL CHANGE MANAGEMENT

Kurt Lewin famously created the three-step model to organizational change, as seen in Figure 3 (Lewin et al., 1958). He argued that, for an organization to successfully change, it must *unfreeze* from its status quo, *move*, or induce the change, then *refreeze*. This method of change allows for organizations to create and develop momentum, implement their change, and reestablish a new status quo (Cummings et al., 2015). Berger et al. (2020) argued that the leaders who shape the organization are most impactful when implementing change and that they must empower employees to take charge of projects at their level. However, for employees to successfully manage change projects at their level, they must be sufficiently trained by the organization (Phillips, 1983). Julien Phillips (1983) argued that organizations must focus on their staff training programs when pursuing organizational change. Abdelouahab Errida and Bouchra Lotfi (2021) argued this point further by stating that the training, coaching, and empowerment

of employees is one of the foundational tools for change management in an organization. One of the best methods for continuous training and improvement for employees of a large organization is the Train-the-Trainer model, which helps subject matter experts train other employees, who then become trainers as well (Graupp, 2022). Patrick Graupp (2022) claimed that, due to its multiplicative nature, the Train-the-Trainer model is one of the most effective training methods for large organizations. Effectively implementing an organizational change management model such as Lewin's is critical to successfully conducting policy and procedure changes in a large-scale organization (Berger et al., 2020; Cummings et al. 2015; Graupp, 2022; Phillips, 1983).

The military is considered by many to be highly resistant to change. Chinn and Dowdy (2014) claimed that even the most experienced military leaders underestimate the degree of inertia required to implement change in the DOD. To achieve change in the military, a complete end-to-end approach must be taken (Abbe et al., 2021; Chinn & Dowdy, 2014; Galvin, 2018). The Marine Corps is currently attempting to undergo sweeping institutional change under the guidance of *Force Design 2030* (Berger, 2020). Carl Forsling (2022) argued that the Marine Corps is struggling to manage change due to its lack of preparation. Forsling referenced Lewin's model for change displayed in Figure 3 and stated that the Marine Corps has failed to prepare for the unfreeze step in the process, thereby failing to generate the momentum required to drive change (Forsling, 2022; Lewin et al., 1958). Additionally, the Marine Corps is struggling with change due to lack of a feedback loop. Peter Reiley (2016) argued that the military tends to implement a top-down approach to change and fails to sustain change at the lowest level. Reiley (2016) went on to state that introducing a feedback loop would help the military to better understand the problem and implement solutions by listening to all stakeholders involved. For the Marine Corps to approach change management more effectively, it must begin by assessing the current training methods to implement an end-to-end approach to change (Berger, 2020; Chinn & Dowdy, 2014; Forsling, 2022; Lewin et al., 1958; Reiley, 2016).

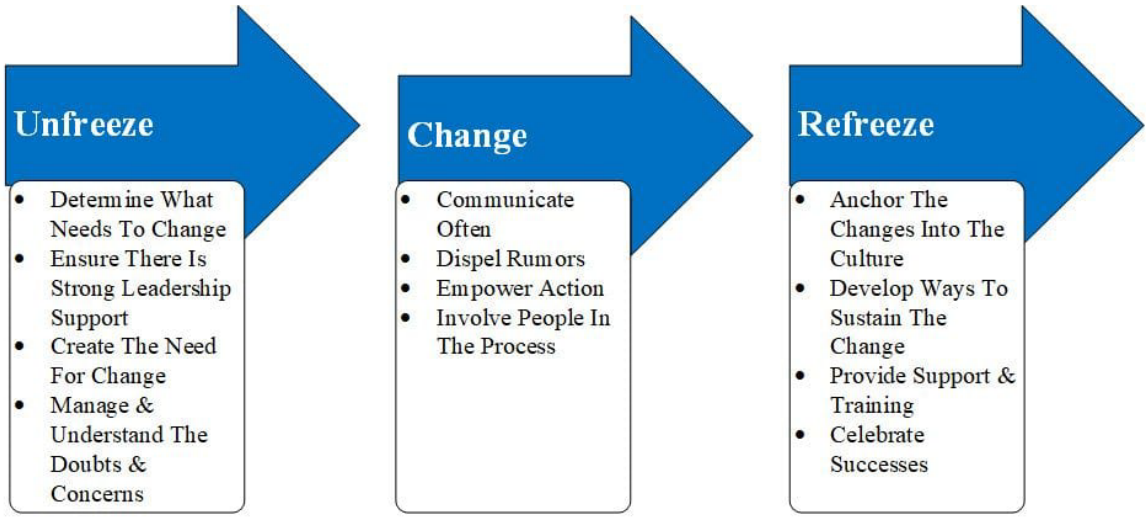


Figure 3. Lewin's Model for Change. Source: Cummings et al. (2015).

C. SUPPLY CHAIN MANAGEMENT IN AN OPERATIONAL ENVIRONMENT

The *Marine Officer MOS Assignment Handbook* (U.S. Marine Corps, 2019) provides new second lieutenants an idea of what each MOS requires and the purpose of each MOS, providing job descriptions of their future responsibilities. It states that, "assignments are made with consideration of student suitability, unique or additional considerations, and student performance" (U.S. Marine Corps, 2019, p. 1). However, this is often not the case. Supply officers have no requirement to have a business background or a financial management background, and new second lieutenants with backgrounds in accounting, financial management, or supply chain management are not given special consideration during the MOS selection process (Maldonado et al., 2018). Maldonado et al. (2018) described this shortfall in the Marine Corps talent management process in their thesis, stating that this "predetermined career roadmap" (p. xix) is an antiquated system that does not take advantage of officers with unique talents and experiences that could be beneficial in specific occupational fields. The Marine Corps has acknowledged this issue as well. In concert with *Force Design 2030,* the Marine Corps has released *Talent Management 2030*, which aims to reassess and modernize the Marine Corps manpower management system (Berger, 2020; U.S. Marine Corps, 2021). One of the focuses of *Talent Management 2030* is to "get the right people on the bus" (Chunn, 2020, p. 37) and

"get the right people in the right seats" (Chunn, 2020, p. 37) to facilitate organizational improvement (Chunn, 2020; Collins, 2001). Kevin Chunn (2020) argued that the Marine Corps must take the time to invest in first-term Marines to create a "purpose built force" (p. 36). With the ever-growing fiduciary and pecuniary liability placed on Marine supply officers, the Marine Corps should consider evaluating its training curriculum and career path (Chunn, 2020; Collins, 2001; Maldonado et al., 2018; U.S. Marine Corps, 2019).

The Marine Corps supply officer is charged with a litany of responsibilities upon arriving to their first unit (see the Appendix, Section B). They are immediately appointed as property accounting manager, funds holder and financial approving authority, fiscal budgeting and accounting officer, supply resource manager, certifying officer, and the automated information system administrator for all financial management and property accounting systems maintained by that command (U.S. Marine Corps, 2018b). These new supply officers have a maximum of 30 days to audit their new supply account and sign for responsibility of all assigned (U.S. Marine Corps, 2018b). Considering the immense authority provided to a new supply officer and the responsibilities related therein, the Marine Corps is duty bound to ensure that these supply officers are adequately trained and prepared for success.

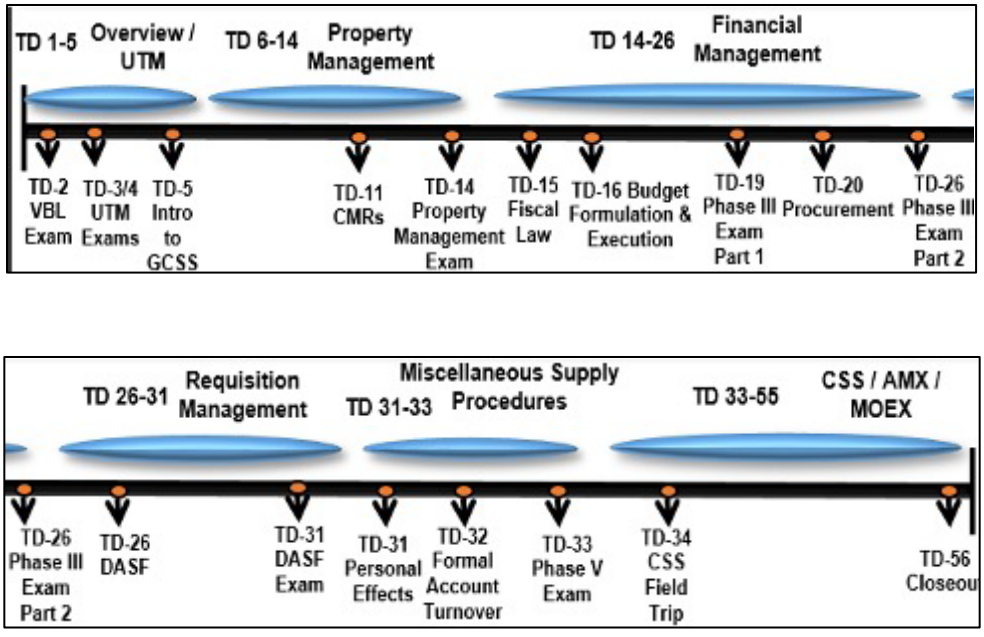


Figure 4. Period of Instruction Timeline. Source: Mindeman, (n.d.)

SCMOC is a 56-day training program for new supply officers, with a mission "to produce entry-level supply chain management officers who are *technically* and *tactically* proficient administrators, and who are trained in property management, procurement, financial management, and combat service support" (Mindeman, n.d., p. 1). As reflected in Figure 4, SCMOC currently spends 8 days on property accounting, 12 days on financial management, 5 days on requisition management, 2 days on miscellaneous supply procedures, and 22 days in practical application. However, the training provided at SCMOC has not been able to accommodate the required rate of change necessary to meet mandated auditability requirements and does not adequately prepare supply officers for their first operational unit (Lawless, 2018; Mindeman, 2022). Lawless (2018) argued that supply officers are only trained to manage tactical-level tasks related to consumer level supply chain management and not the managerial level required by the duties assigned to supply officers. Irion (2020) continued this point by stating that the current training at SCMOC does not align with *Force Design 2030*, and Naval Logistics Integration in an operational environment needs to be more heavily included in SCMOC. SCMOC instructors should continue to develop and improve the period of instruction (POI) to adequately prepare supply officers for their first operational unit and ensure mandated auditability requirements are met (Irion, 2020; Lawless, 2018; Mindeman, 2022).

Changing any POI is a difficult process that can take months, if not years, to be approved for implementation. Navy and Marine Corps Publication 1553.2 outlines the responsibilities of formal schools and how they can manage and update their approved POI (U.S. Marine Corps, 2015). Changing the POI requires a command-directed course content review board (CCRB) to be submitted to the Marine Corp's Training Command (U.S. Marine Corps, 2015). Requesting changes to POIs is time-consuming, requiring nearly 2.5 years to conduct the CCRB, record the results, submit the findings to Training Command, complete the board, and approve the prescribed changes (U.S. Marine Corps, 2015). It can often take an additional 6 months to a year in addition to the CCRB process for an MOS school to receive the board's approval and implement changes to the POI (U.S. Marine Corps, 2015). The process is not timely and is excessively bureaucratic, and it does not effectively support timely critical changes to a POI (Mindeman, 2022). In a

non-attributional interview conducted with a subject matter expert at SCMOC, he stated that the CCRB is overly bureaucratic and detrimentally effects SCMOC's ability to adequately train supply officers to the most current supply chain management policies and procedures. To provide an example, he stated that, despite DAI's implementation almost 2 years ago in October 2020, SCMOC has still yet to implement any form of DAI training for new supply officers. In an essay regarding this topic, Nathan Mindeman (2022) stated, "The Marine Corps' current training and readiness review and CCRB cycle reflects an industrial age model that is not responsive to the needs of the students, nor does it support the Marine Corps' combat readiness" (p.2).

D. MARINE CORPS RETENTION CHALLENGES

Retention is a growing problem within the U.S. armed services, especially in low-density specialties such as the supply chain management communities for officers and enlisted personnel (Bloomberg, 2022; Britzky, 2022; Kenney, 2021; Snow, 2018). Shawn Snow (2018) observed the enlistment goals for the last 5 years and noticed a pattern that the quota is constantly increasing, leading to the largest requirement in a decade. There is a large void that is created by the number of "first-termers" who exit after completing a single contract, and it is getting more difficult for the recruiters to fill that void (Chunn, 2020; Swanson, 2019). Kevin Chunn (2020) argued that *Force Design 2030* calls for a more specialized force and that the Marine Corps must focus on retaining high quality talent. If the Marine Corps is to continue being a superior fighting force in the world, the service must find a way to keep high quality Marines in active-duty service for longer than a single contract.

Retaining first-term Marines is even more important in the combat service support (CSS) MOSs such as supply chain management (Hall, 2001). Hall (2001) identified in his survey that, of Marines in CSS roles, nearly 39% reported being dissatisfied with their experience during their first tour. McFarland (2018) argued that this is still a problem in today's retention efforts, stating in his study that Marines with CSS MOSs display a negative effect on retention when compared to Marines in combat arms. With nearly 20

years of retention issues, the Marine Corps should consider how it might improve retention of talented Marines in CSS roles (McFarland, 2018).

E. LITERATURE REVIEW SUMMARY

In conclusion, this literature review introduced several topics that build the foundation for the study conducted in this thesis. In this chapter, we discussed the issues catalyzing change in the Marine Corps, and thereby the need for supply chain management training: poor fiscal audit performance, evolving operational environments, slow-responding organizational change management, and resulting challenges in retention and recruitment for supply chain management professionals.

THIS PAGE INTENTIONALLY LEFT BLANK

III. METHODOLOGY

In this chapter, we discuss the mixed-method research approach we employed and how to integrate qualitative and quantitative data. We discuss the approach in implementing mixed-method research, the overarching research design for both the qualitative and quantitative methods, and how the data is analyzed in Chapter 4.

A. RESEARCH APPROACH

This study utilized a qualitative and quantitative mixed-method design to evaluate two different points of view concerning how well Marine Corps supply officers are trained and can execute their duties. Mixed-method design was selected to provide perspectives on supply officer training and performance via both raw audit results as well as the objective view of the community via a questionnaire. The quantitative data utilized in this study were obtained from FSMAO and 1st Marine Logistics Group (MLG) auditors and are a matter of public record. The qualitative data were collected via an anonymous survey targeting company-grade supply officers who have completed or are currently completing their first tour. The data collected was in the form of yes and no answers and was non–subject based-research.[1]

The study utilized 18 separate audit results from Marine Corps fleet units that underwent FSMAO and LRE audits between 2020 and 2021. Each audit covers 1 year of data that were utilized to draw a conclusion to the question being asked: Do the current training doctrine and methods for training Marine Corps supply officers result in the unit's operational effectiveness? The audit data were used to establish averages between units and to show what functional areas were above or below the mean. The results compared with the POI will assist stakeholders in modifying the POI to render better results in the areas that fell *below* the mean requirement. Box charts were used to create tables to show values with resulting probabilities for data received from the FSMAO and LRE analysis.

[1] The Institutional Review Board (IRB) has reviewed this study and determined that the study does not meet the federal definition of "human-subjects research" as defined under 32 C.F.R. 219 and, therefore, does not require IRB review or approval.

The audits encompass units ranging from infantry battalions to the MLG with the general focus of supply chain management or ground supply functional areas. The structure of the units is similar and covers all functional areas of supply: property management, serialized small arms, general supply procedures, warehousing, personal effects, requisition management, commercial procurement, and fiscal. Audit results were broken down by section, by the number of samples inspected, and by the number of samples that had discrepancies. This data was then calculated and given a mean based on discrepant samples and total sample size. The Marine Corps could conduct this same research on a larger scale to identify problem areas utilizing past audit results.

The utilization of the results weighted against the focus of this study is important to capture the possible relationship of poor test results relating to fiscal and commercial procurement. If a negative trend was established in the descriptive data, a possible conclusion is that the structure of the training schedule or content is insufficient, unbalanced, and does not meet operational needs. This research is structured to identify if any functional area of supply is chronically underperforming due to a lack of training at SCMOC and, if so, if there are consequences affecting operational performance and retention in the Marine Corps.

We are interested in how recent policy changes are implemented at SCMOC and, based on that implementation, how supply officers and their operational units were affected. As this is not discernable from inspection results, we conducted a qualitative method of research to canvas supply officers on their experiences and how those experiences have affected units' operational performance.

B. RESEARCH DESIGN

The purpose of this mixed-methodology research is to identify shortfalls of, and possible improvements to, entry-level and follow-on training for company-grade supply officers throughout the Marine Corps. We paired collected data with the experiences of operational supply officers following a fleet tour, which was assessed via questionnaire. We used a descriptive statistics design to identify characteristics, trends, and averages utilizing data collected by third-party audit teams in the form of FSMAO and LRE, then

compared those statistics with the questionnaire to answer the research question and identify the validity of the hypotheses.

C. QUALITATIVE METHOD AND RESEARCH APPROACH

The purpose of implementing a qualitative research aspect into this assessment is to obtain data from those most affected by the current state of the SCMOC period of instruction—namely, company-grade supply officers (second lieutenants through captains) with a target audience of those who recently completed or are near completion of their first operational tour. As quantitative data can be sometimes inconsistent due to the variability of inspections teams and operational environments, receiving qualitative data regarding the performance of the unit based on an officer's knowledge received from SCMOC helps provide a complete view of current MOS training in relation to operational performance. Additionally, the questionnaire provides insight into how effective (or ineffective) training affects a supply officer's decision to stay in the Marine Corps after their initial period of obligated service, adequately answering the second part of the research question: Does structural misalignment of training content for ground supply officers lead to suboptimization of operational performance *and to lower retention rates*?

Operational performance can be assessed easily via audit results gathered from various FSMAO and LRE offices throughout the Marine Corps, and a trend analysis can be conducted; however, it is difficult to statistically identify relationships in a trend of audit results. Combining a trend analysis of audit results with qualitative data in the form of a community-wide questionnaire provides more context and evidence of for how the current SCMOC POI is affecting performance and retention throughout the Marine Corps.

In compliance with the Naval Postgraduate School (NPS) Human Research Protection Office and Institutional Review Board (IRB), we—including the principal investigator—submitted a Human Subject Research Determination Request. The response to the request was an IRB determination that the study did not involve human subject-based research and did not require further approval from the IRB or the NPS president. After receiving approval from the IRB to proceed, we began to identify the

population of officers most likely to provide relevant feedback and began to develop the questionnaire. We focused on identifying as many supply officers as possible with relevant experience to participate in this questionnaire.

1. Sample Population

This research is centered around the recent experience (past 5 years) of officers who have attended SCMOC and experienced the effects of the POI on their ability to conduct supply chain management in an operational environment. Additionally, these supply officers are now considering or have recently considered remaining in the Marine Corps or leaving active service. We identified 180 supply officers that had attended SCMOC between 2017 and 2021 as the sample population. This provided a range of officers ranking as first lieutenants or captains who have completed or are now ending their first operational tour.

2. Questionnaire

After identifying the target population, we began designing the questionnaire. Its purpose was not to solicit subjective data but to collect feedback on questions targeting specific areas. Avoiding opinion-based responses, the sample population was asked to answer "yes" or "no" to nine questions that specifically addressed operational performance and retention. The finalized questionnaire that was disseminated is included as the Appendix, Section A, but the core questions as well as the purpose associated with each question are outlined in Figure 5.

Questionnaire	
Question	**Purpose**
1. Were you adequately prepared by Supply Chain Management Officer Course (SCMOC) for your first operational deployment or exercise?	To provide objective data regarding operational experience using knowledge gained from a recent SCMOC POI.
2. Were you adequately prepared by SCMOC for your first Field Supply and Maintenance Analysis Office (FSMAO) inspection?	To annotate how the recent SCMOC POI are directly affecting audit performance in the Marine Corps.
3. Did your unit fail any portion of the FSMAO inspection?	To identify any trends in audit failure and potentially identify correlation in the focus of the SCMOC POI.
4. If yes to Question 3, which section did your unit fail?	To provide further context to the data collected in Question (3).
5. If you attended SCMOC prior to October 2020, did you receive SABRS training?	To identify any specific gaps in training related to the Marine Corps general ledger program, which is integral in a supply officer's daily duties.
6. If you attended SCMOC after October 2020, did you receive DAI training?	
7. Has your experience during your first operational tour as a Supply Officer affected your desire to remain on active duty?	To identify how the outcomes of operational experience and audit performance affect a supply officer's desire to remain on active duty.
8. If yes to Question 7, were the effects of your first tour on your desire to remain on active duty: Positive or Negative?	
9. Would you attend a Captain-level intermediate supply officer course if offered?	To gauge interest in a potential recommendation by the researchers to design and implement an intermediate-level SCMOC.

Figure 5. Supply Officer Questionnaire

The instructions included with the questionnaire were simplistic in nature. The email that was disseminated with the questionnaire included a brief introduction and greeting and a request for participation in the questionnaire. The email stated that participation was optional and that the results were anonymous as well as provided a purpose of potentially changing or improving training for future supply officers. The specific purpose for each question is denoted in Figure 5; however, the overall purpose for this questionnaire was to provide context to the quantitative data gathered in the form of audit results. The contextualization focused on effects of the SCMOC POI on recent audit results (Questions 1–6) and effects of their first operational tour on the supply officers' desire to remain on active duty (Questions 7–8). The last question, Question 9, gauged interest for a potential improvement to supply officer training through the creation of an intermediate course.

3. Data Collection and Analysis

The questionnaire was formed and distributed using Microsoft Forms (Microsoft Corporation, n.d.). We also relied on the automated response aggregation feature of Microsoft Forms for the initial analysis of the questionnaire results. The included summarization of responses allowed us to easily identify trends in the data. The several "yes" or "no" questions were summarized using pie charts, and Question 4 produced a bar chart showing trends in failed FSMAO inspection categories.

While the results were anonymous, the structure and organization of the questionnaire allowed us to generally identify the demographic of the respondents. Questions 5 and 6 identified when the respondents attended SCMOC (before or after October 2020), which provided context for the seniority of the respondent.[2] For example, if a respondent answered that they attended SCMOC prior to October 2020, we concluded that this respondent completed their first operational tour and had decided whether to remain in active service for another set of orders or to depart. The population breakdown is displayed in Figure 6.

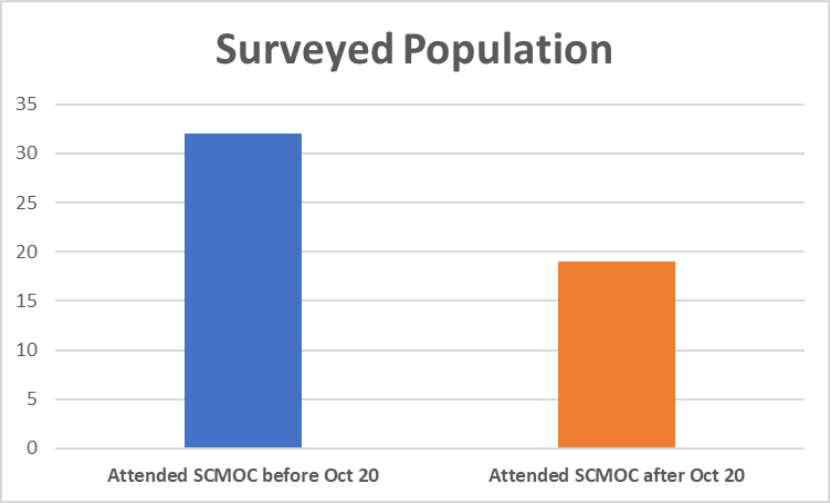


Figure 6. Surveyed Population of Officers Who Attended SCMOC Before and After October 2020

[2] Question 5 read, If you attended SCMOC prior to October 2020, did you receive SABRS training? Question 6 asked, If you attended SCMOC after October 2020, did you receive DAI training?

The additional context gathered by Questions 5 and 6 allowed us to view these responses individually as well as summarized with all responses, providing additional demographic information regarding Questions 7 and 8, which regards supply officer retention.[3] We posited that an officer who attended SCMOC prior to October 2020 was more likely to have answered that SCMOC had a positive effect on their desire to remain on active service, because that respondent had generally already decided to remain in the Marine Corps. If the respondent attended SCMOC after 2020, then they likely had not yet formally decided to remain in the Marine Corps and could be considering departing active service.

In summary, the responses can be looked at individually to identify trends and validate assumptions while also viewed together to conduct trend analysis and provide context to the overarching mindset of the supply officer community.

D. QUANTITATIVE METHOD

We used descriptive statistics to identify quantitative data sets that would allow us to analyze the data in different ways. We were interested in testing the hypothesis against the population (N) and what the results would be. A sample (n) of 12 was obtained, and we analyzed that data in two separate sections: property management and financial management. Property management encompasses all data except fiscal and commercial procurement. Financial management includes fiscal, commercial procurement. The sample size captured from property management was n = 89, and the sample size captured from financial management was n = 30.

a. Analysis Method (Box and Whisker Chart)

We selected the box and whisker chart as the method of analysis, as it most accurately shows the distribution summary across groups. The boxplot is made up of four

[3] Question 7 read, Has your experience during your first operational tour as a supply officer affected your desire to remain on active duty?

Question 8 asked, If yes to Question 7, were the effects of your first tour on your desire to remain on active duty: positive or negative?

components that give a robust summary of the data sets (Wickham & Stryjewski, 2012). These five components are:

- the median
- the mean
- two hinges, the upper and lower fourths (quartiles)
- the data values adjacent to the upper and lower fences, which lie 1.5 times the inter-fourth range from the median
- Two whiskers that connect the hinges to the fences, and (potential) outliers, individual points further away from the median than the extremes

Figure 7 provides a visual description of the box and whisker chart. The statistical data will be summarized by using the mean and the median. The mean represents the simple average of all collected data points, while the median represents the middle, or center point, of the data points (Salmond, 2007).

The quantitative data will be tested using the box and whisker chart to determine if there is enough statistical evidence to t accept or reject either the hypothesis or the null.[4] The *p* value will determine if the quantitative data analyzed is statistically significant if $p < 0.05$, or within a 95% confidence level. If $p > 0.05$, the quantitative data is not statistically significant, and we will reject the given hypothesis (i.e., H_1) and accept the null (i.e., H_O). .

[4] H_1: A lack of agility in supply officer training curriculum content creates shortfalls in operational performance.

H_O: A lack of agility in supply officer training curriculum content *does not* affect operational performance.

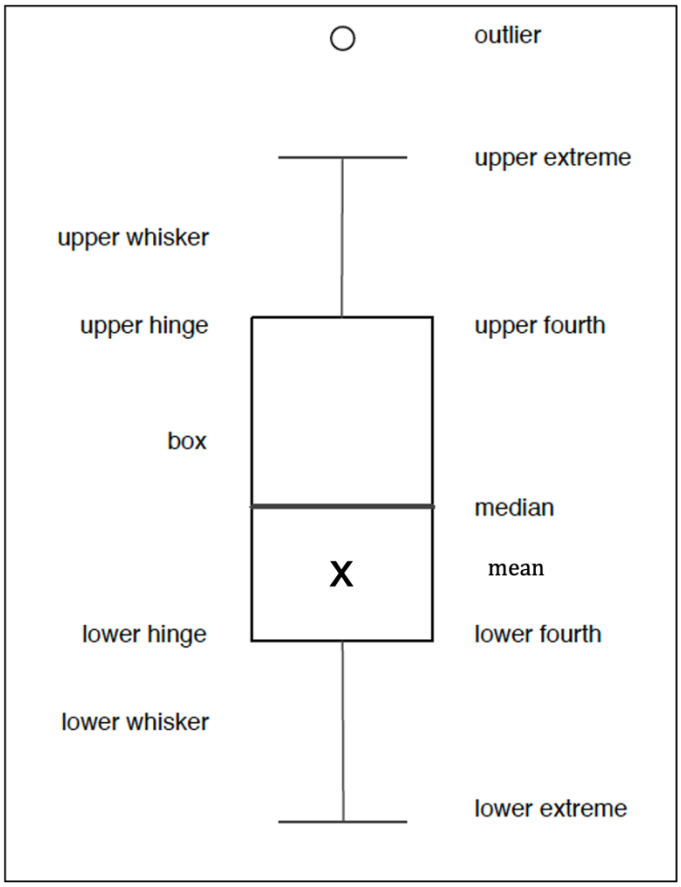


Figure 7. Box and Whisker Chart Diagram. Source: Wickham and Styjewski (2012).

b. Collection of Audit Data

The quantitative aspect of this mixed-method research relied heavily on aggregate data gathered on results from FSMAO and LRE audits conducted by independent auditors on supply accounts throughout the Marine Corps. FSMAO and LRE audits are thorough reviews of Marine Corps using-unit supply accounts that occur annually, alternating yearly between MSE auditors and auditors from regional FSMAO offices (U.S. Marine Corps, 2013). FSMAO and LRE audits include all functional areas of supply: property management, control of serialized small arms, general supply procedures, warehousing, personal effects, requisition management, commercial procurement, and fiscal. Each functional area is thoroughly reviewed by the audit team, and the entirety of the FSMAO and LRE audits lasts approximately 2 weeks.

To collect the data, we requested support from regional FSMAO and LRE offices for open-source audit results. In response, we received 18 complete audit results and corresponding reports from FSMAO audits conducted by MSE auditors on using-unit supply activities within the last 2 years. While we received over 70 reports, there were only *18* formally recorded data points and scores for each unit's functional supply areas, limiting the use of the additional reports. As a result, we summarized the 18 completed reports to conduct a formal trend analysis.

To conduct quantitative analysis on the 18 audit reports, we compiled the results in Microsoft Excel. Each functional area of supply received a score from 0%–100% based on the results of the audit. After inputting the percentage score of each functional area for each unit, we summarized and analyzed the results using a bar chart and box and whisker plot charts. We compared the summarized results via multiple methods. First, we compared the scores for each functional area to the length of time spent training supply officers to those functions per the SCMOC period of instruction. This allowed us to identify if any suboptimal performance in a specific category was related to a shorter length of instruction. If there was a relation to suboptimal performance in a particular category and a comparatively short length of instruction at SCMOC on that category, it would be a noteworthy finding. Then, we compared the quantitative results of the audits to the qualitative data gathered from the questionnaire.[5] We compared these results were compared to the audits provided by the FSMAO and LRE office to identify if the sample audits received by the FSMAO and LRE officer accurately represented audit results throughout the Marine Corps. Assessing the audit results using these methods should identify if SCMOC is adequately preparing supply officers for their first operational tours.

E. METHODOLOGY SUMMARY

We implemented a mixed methodology with both qualitative and quantitative analysis models to provide a sound and supportable foundation of research into whether SCMOC is adequately preparing supply officers for their first operational tours. The

[5] Questions 3 and 4 requested specific feedback on whether the respondent failed their FSMAO or LRE audit and, if so, which functional area.

qualitative model with the questionnaire capitalizes on supply officers ranked first lieutenants and captains who have completed or are completing their first operational tour and their insights on whether they were set up for success in the operating forces. Although no two Marine supply officers will have the same fleet experiences, with many different units and deployments, it is crucial to gather firsthand accounts on the quality of instruction that SCMOC is providing. The quantitative model with audit results was used to test the hypothesis that increasing training days on financial management will increase auditability and audit results. By analyzing both the audits and the questionnaire results, we expect to see a relationship between officers reporting they were not well prepared and unsatisfactory audit results and use this information to possibly indicate the potential of their performance shortfalls in the operational forces.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. ANALYSIS AND FINDINGS

In this chapter, Analysis and Findings, we present the data received, test the data, then interpret and present the findings to the reader. This includes both the qualitative data in the form of questionnaire responses and quantitative data in the form of statistical analysis of audit results.

A. QUALITATIVE RESEARCH QUESTIONNAIRE RESULTS

Overall, our administration of the questionnaire was largely successful, receiving 51 responses out of the 180 Marine Corps supply officers solicited for responses. With a respectable 28% response rate, we were able to collect sufficient objective data in the form of questionnaire responses from multiple populations of the supply officer community.

Questionnaire responses were anonymous by design, providing no identifying unit or personnel information. However, broad demographics were identified via analysis of the responses. Questions 5 and 6 identify the general career timing of the respondent. The results provide a distribution slightly in favor of supply officers who attended SCMOC prior to October 2020, with 32 respondents answering Question 5.[6] This question identifies the survey results as 62% received from officers who have likely completed their first operational tour and are staying, and 38% who are still currently completing their first tour. Having identified the general demographics of the sample population, we can now analyze each question further by considering career timing in the results, based on previously described assumptions.[7]

[6] Questions 5 and 6 identified when the respondents attended SCMOC (before or after October 2020), which provided context for the seniority of the respondent

[7] We are assuming that if a respondent attended SCMOC prior to October 2020, they are more likely to have answered that SCMOC had a positive effect on their desire to remain on active service because that respondent has generally already decided to accept a second set of orders. If the respondent attended SCMOC after 2020, then they have likely not yet formally accepted a second set of orders and could be considering departing active service.

When responding to Question 1,[8] 61% of personnel felt that they were not adequately prepared for their first deployment or exercise, while 39% felt that they received sufficient MOS training.[9] For those who attended SCMOC prior to October 2020, 68% believed they were not adequately prepared, while 32% did. For those officers who attended SCMOC after October 2020, the results were more evenly split. Among this group of respondents, 47% did not believe they were adequately prepared for their first deployment or exercise, while 52% felt they were sufficiently trained. Question 2[10] is similar to Question 1, and the overall results were extremely similar to those for Question 1, with 58% of officers answering that they were not adequately prepared for their first FSMAO audit and 42% answering that they were. Officers who attended SCMOC prior to October 2020, 63% answered that they were not prepared for their first audit, and 37% answered that they were. Among the officers who attended SCMOC after 2020, 52% said they were not prepared for their first FSMAO audit, while 47% said they were prepared.

Questions 1 and 2 ask for a respondent's objective answer to whether or not they received sufficient MOS training to perform assigned duties. Both the overall results as well as responses grouped by demographic show a similar trend. Those officers who attended SCMOC prior to 2020, in general, indicate that the MOS training was not adequate, whereas those who attended after October 2020 felt more prepared to perform their assigned duties. This could be representative of previous improvements to the POI at SCMOC which focus more acutely on commercial procurement and fiscal operations.

To accompany the quantitative data received from various FSMAO audits, Question 3 asks respondents if their unit failed any portion of the FSMAO audit, and Question 4 asks respondents to identify which functional area of supply their unit failed, if any. Of the respondents, 35% answered that their unit failed at least one functional area of supply during their FSMAO audit. The categorical data collected from Question 4 is shown in Figure 8:

[8] Question 1: Were you adequately prepared by SCMOC for your first operational deployment or exercise?

[9] Question 1: Were you adequately prepared by SCMOC for your first operational deployment or exercise?

[10] Question 2: Were you adequately prepared by SCMOC for your first FSMAO inspection?

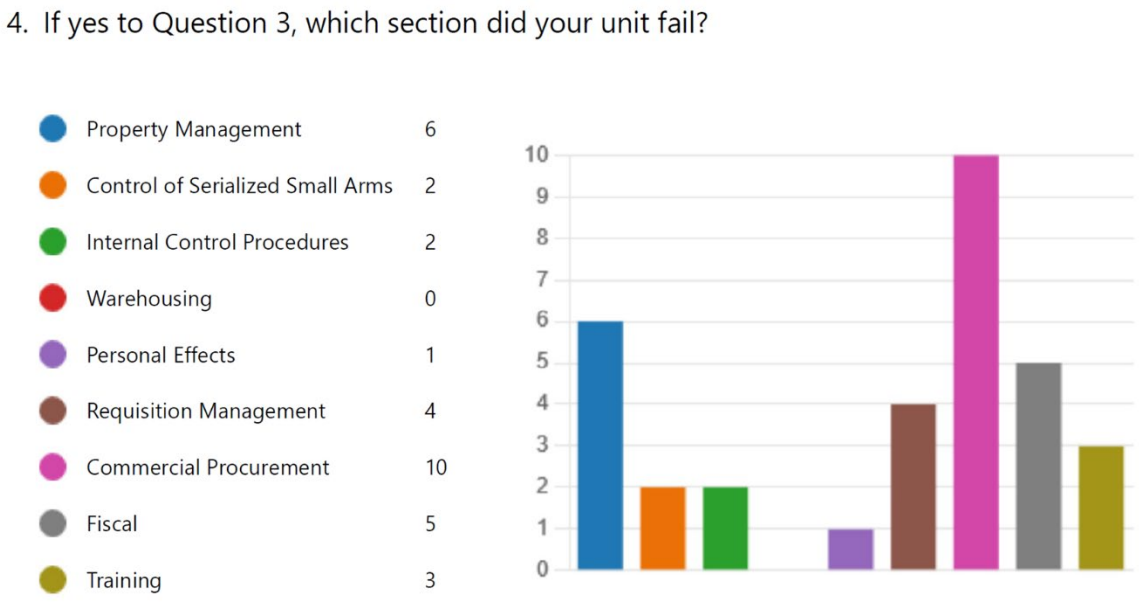


Figure 8. Question 4 from Supply Officer Questionnaire.

As depicted in Figure 8, commercial procurement is by far the most failed functional area of supply. While the quantitative data may depict a different result, the results of this questionnaire show that 56% of respondents who failed their FSMAO audit, as a whole, also failed the *commercial procurement segment*. Of note, of these respondents who failed commercial procurement, 70% were supply officers who attended SCMOC prior to October 2020. The questionnaire received more respondents who attended SCMOC prior to October 2020 compared to those who attended after (32 compared to 19).

Questions 5 and 6, while providing demographic information, also asked respondents whether they received specific training at SCMOC[11]. As previously discussed in the literature review, SABRS was the general ledger utilized by the Marine Corps until October 2020, when it was replaced by DAI. Not only did DAI replace SABRS as the general ledger, but it also replaced PRBuilder, which was software used primarily for the execution of commercial procurement (Stippey, 2021). Understandably, being familiar with DAI is integral to being able to perform duties assigned to supply officers and can compromise the operational performance of the unit, if not effectively

[11] Question 5 reads, "If you attended SCMOC prior to October 2020, did you receive SABRS training?" Question 6 asks, "If you attended SCMOC after October 2020, did you receive DAI training?"

employed. The results of this survey identified a chronic lack of training in DAI software suite. Question 5 provides context to Question 6. According to the data, 59% of the supply officers who attended SCMOC prior to October 2020 stated that they received some form of SABRS training, while 41% said they did not. Question 6 conclusively shows that 99% of the respondents who attended SCMOC after October 2020 did not receive any form of DAI training. Of note, DAI formally replaced SABRS and PRBuilder on October 1, 2020, which is the date Questions 5 and 6 are based on. The results of Questions 5 and 6 show that, in the 2 years that DAI has been mandatory throughout the Marine Corps, SCMOC has lacked and currently lacks the capability or the resources to train new supply officers on the use of the Marine Corps' new general ledger.

Questions 7 and 8 focus on supply officer retention. We seek to identify how a supply officer's first operational tour, whether good or bad, affects their desire to remain on active duty. Of the respondents, 86% answered that their first operational tour influenced their desire to remain on active duty, with 14% answering that their first tour had no effect.[12] According to the responses, 67% of respondents said that their first operational tour had a negative effect on their desires to remain on active duty, with 33% answering that the effect was *positive*. This answer indicates that a relationship exists between these two because it shows that most supply officers are leaving their first operational tour with a *negative* experience. Of note, this is not completely representative of the supply officer population, because officers who separated from active service after their first tour could not be included in this poll. Therefore, we are assuming that those officers canvassed who attended SCMOC before October 2020 have likely already accepted a second set of orders and chose to remain on active duty. Their peers who decided *not* to accept a second set of orders are obviously *not* included in this population. This is clearly displayed using Questions 5 and 6 to view the demographic of supply officers who answered that they are still on their first set of orders. Of the 19 supply officers who attended SCMOC after October 2020, an overwhelming 78% answered that

[12] Question 7 reads, "Has your experience during your first operational tour as a Supply Officer affected your desire to remain on active duty?"

Question 8 asks, "If yes to Question 7, were the effects of your first tour on your desire to remain on active duty: Positive or Negative?"

their first operational tour had a negative effect on their desire to remain on active duty. Only 15% answered that it had a positive effect, and 7% answered that it had no effect. This is the most significant finding of the questionnaire. While the questionnaire *did not identify* the root cause of the negative experience of first-tour supply officers, it shows that most supply officers are likely to leave active service after their first tour. For context, those supply officers who attended SCMOC prior to October 2020 answered that 46% had a negative effect, 38% had a positive effect, and 16% had *no* effect on their desire to remain on active service. We believe this shows skewed data based on the *lack* of inclusion of supply officers who attended SCMOC prior to October 2020 and have since left active duty. The results of Questions 7 and 8 are displayed in Figure 9.

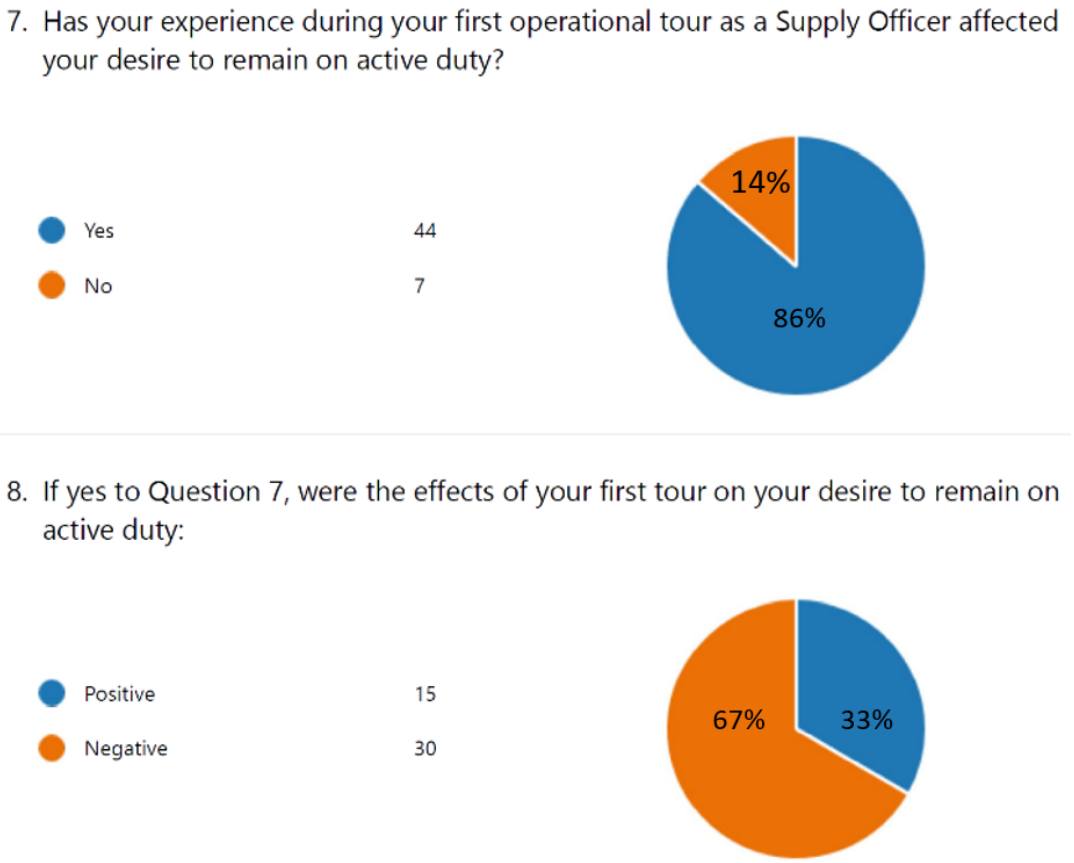


Figure 9. Questions 7 and 8 from Supply Officer Questionnaire

The purpose of Question 9 was to discern preliminary interest from the supply officer community in an intermediate-level supply officer training course. According to the responses, 82% of supply officers answered that they would attend an intermediate

course if offered while 18% answered that they would not. We predict that creating and offering a multi-week resident course to senior first lieutenants and junior captains regarding Marine Air–Ground Task Force and expeditionary supply strategies and procedures would be beneficial to both officer retention as well as supply chain management performance of units throughout the Marine Corps. The resident course is discussed further in the Recommendations section.

In summary, we consider the questionnaire to be largely successful in gathering objective data from the company-grade supply officer community on active service. It provides significant quantitative information to accompany the FSMAO results gathered as well as qualitative data regarding training, operational performance, and retention. The qualitative data provides evidence suggests that both the first and second hypotheses (i.e., H_1 and H_2) should be accepted, indicating rejection of the null in both cases. Questions 1-6 provide substantial evidence that a lack of agility in the supply officer training curriculum is impacting operational performance. Questions 7 and 8 provide evidence that shortfalls in operational training may be impacting retention of supply officers. The summarized questionnaire results and detailed results from the respondents can be found in Appendices C and D, respectively.

B. QUANTITATIVE FSMAO AND LRE RESULTS

FSMAO and LRE are almost identical in format, but LRE audits are slightly more detailed and analytical. LREs are conducted by the unit's Major Subordinate Elements, while FSMAO audits are conducted by one of the regional FSMAO teams. Each audit is conducted annually, but a unit will not receive an LRE and FSMAO audit in the same year. Instead, a unit will receive a FSMAO audit one year, followed by an LRE audit the next year. Units are also required to conduct their own internal controls audits utilizing the *Supply Officer's Internal Controls Handbook* (U.S. Marine Corps, 2020a). This audit is due to the unit's higher headquarters at the end of every year (U.S. Marine Corps, 2020a).

The overall analysis of the 12 FSMAO individual audit results and six LRE individual audit results identified trends between the eight functional areas. Descriptive statistics, mean comparison, and box and whisker plot charts were utilized to identify

trends and assign values to each functional area. Marine Corps Order 4400.160 (U.S. Marine Corps, 2013) covers the FSMAO program and sets the standards for audit. FSMAO conducts a comprehensive analysis on all units in the operational forces. The audit includes a 100% inventory of all reportable ground equipment as well as property management, serialized small arms, general supply procedures, warehousing, personal effects, requisition management, commercial procurement, and fiscal. The audit years range from 2020 to 2021, and the units vary from infantry units and artillery units to light armored reconnaissance units and MLG. Although the units vary, the audit checklist used is consistent. Audit population sample size varied across units but did not have a negative impact on the overall audit results and averages. Each unit's operations vary slightly and, therefore, each unit utilizes each functional area at a different level and frequency. The *passing grade* for a functional area is 80%, which is the percentage established by the audit office in an annual Marine Administrative Message submitted by FSMAO. This value is equitable across all functional areas and is the standard for all FSMAO audits. The FSMAO office utilizes the Statistical Yamane Sampling Formula[13] to determine the sample sizes from the population size (U.S. Marine Corps, 2013).

The audit results were provided by FSMAO–W, and LRE results were obtained from 1st MLG. All data is open source and available upon request. Each audit covers 1 years' worth of data for each unit ranging from property management to fiscal. All summarized audit data can be view in the Appendix, Section, C.

1. COMBINED FSMAO AND LRE DATA

Property management is the first functional area listed for FSMAO, and the scores range from 49% to 100% with an average score of 83% computed across 12 units. LRE results ranged from 68% to 98% with an average of 85% computed across six units. This functional area covers authorized allowances, on-hand management of the virtual inventory within Global Combat Support System-Marine Corps (GCSS-MC),

[13] Any functional area with 10 items or less will have all documents inspected, while units with 4,000–19,999 items will have 98 documents inspected. The formula parameters are 95% confidence level with 10% level of precision, n = N/(1 + N*e) (n = sample size, N = population size, e = level of precision squared; U.S. Marine Corps, 2013).

administrative appointments, accountability procedures, financial liability investigation for property loss, key supporting documentation, money value gains and losses, and annual physical inventories. This functional area is covered in depth at SCMOC. New supply officers spend 9 training days conducting property management in the POI (see Figure 4). This functional area is also the base of the final exercise conducted at SMOC in preparation for graduation. SCMOC has access to the GCSS-MC jump site, which gives the students the ability to conduct general supply business on an offline system.

FSMAO serialized small arms scores ranged from 51% to 100% with an average score of 86% computed across 12 units. LRE scores ranged from 80% to 100% with an average of 91% computed across six units. This functional area is very similar to property management as the same rules and guidelines relate to the accountability of weapon systems and Standard List 3 (SL3) gear.

FSMAO general supply procedures scores ranged 68% to 100% with an average of 91% computed across 12 units. LRE scores ranged from 83% to 100% with an average of 97% computed across six units. This functional area covers the administrative actions that affect the health of the account. This includes appointment letters, certificates of relief, roles and responsibilities, and the conduct of internal control audits. This functional area is also the base of the final exercise conducted at SCMOC and is included in property management.

FSMAO warehousing scores ranged from 25% to 100% with an average score of 84% computed across 12 units. LRE scores ranged from 83% to 100% with an average score of 94% computed across six units. This functional area is covered briefly in the POI. FSMAO personal effects scores ranged from 0 to 100% with an average score of 75% computed across 12 units. LRE scores ranged from 47% to 100% with an average of 83% computed across six units. This functional area is covered with warehousing and is included in the final exercise at SCMOC.

FSMAO requisition management scores ranged from 32% to 98% with an average score of 77% computed across 12 units. LRE scores ranged from 58% to 100% with an average of 79% computed across six units. This functional area covers orders placed through GCSS-MC, administrative management of those items while on order,

status updates on orders, delivery, and issue of those items. This functional area is covered in the POI, and students spend 6 training days focused on this (see Figure 4).

FSMAO commercial procurement scores ranged from 50% to 99% with an average score of 77% computed across 12 units. LRE scores ranged from 45% to 94% with an average of 74% computed across six units. This functional area covers purchases not made through GCCS-MC and relate to fuel purchases, ServMart[14] purchases, and government commercial purchase card (GCPC) purchases. This item is very difficult to train to, as there is no offline system for students to mimic transaction data for purchases (i.e., fuel and GCPC). This functional area is covered in the POI, and students spend 1 training day focused on this area (see Figure 4).

Fiscal scores ranged from 18% to 100% with an average score of 64% computed across 12 units. This is the lowest scoring area out of the eight. This functional area covers all purchases as they are committed, obligated, expensed, and liquidated. The previous system utilized to balance a unit's budget was SABRS, but it transitioned to DAI in 2020. Fiscal includes budget creation, execution, and management throughout a fiscal year. This functional area is covered in the POI, and students spend 12 training days on this (see Figure 4).

2. BOX AND WHISKER ANALYSIS

We combined the FSMAO and LRE data into two categories. The first category is financial management (i.e., commercial procurement, procurement, and fiscal), and the second is property accountability. The combined financial management category produced a sample size of n = 30, while the property management category created a sample size of n = 98. The sample mean ($\bar{x}$) for the financial management population (n) is 71.3% and is below the threshold for what is considered a passing score according to FSMAO and LRE audit criteria (FSMAO-W, 2022). The sample mean ($\bar{x}$) for property management is 85.2% and is above the threshold for what is considered a passing score according to FSMAO and LRE audit criteria (FSMAO-W, 2022).

[14] ServMart is a procurement method employed in the Marine Corps through which units are able to purchase basic office supplies and other basic necessities from an on-base facility operated by contractors.

Figure 10 shows two box and whisker plots within one chart. The box and whisker plot chart on the left is property management (blue) and the box and whisker plot chart on the right is financial management (gray). Each chart shows three values or quartiles (Q). The colored box is the interquartile range (IQR). The IQR is the measure of where the "middle 50%" or the bulk of the values are clustered around the mean. The IQR = Q3 – Q1 (Glen, 1993). This presents the data in a way that is easy to identify the distribution of the sample size. Box and whisker plot charts handle large amounts of data easily, provide a clear summary of the data, and display outliers to provide further analysis (Ladkin, 2018). Utilizing a box and whisker chart allows the reader to make comparisons between groups or data sets and allows for the testing of a hypothesis (Nikolić-ðorić et al., 2006). Nikolić-ðorić et al. (2006) also concluded that box graphs are very useful in preliminary data analysis due to the illustrative qualities and simplicity of interpretation.

Figure 10, property management, shows Q 1 = 0.98, a median of 0.89 and Q3 = 0.78. There are four outlier values below the lower extreme value of 0.49. The cluster of the descriptive data is above the passing score of 80% for property management. The sample mean is depicted as $\bar{x} = 0.843$ in the lower hinge of the box graph. The lower fence, Q1 – (1.5 × IQR), and the upper fence, Q3 + (1.5 × IQR), represent cutoff values and where outlier values may be present. As depicted in Figure 10, the lower fence is located at 1.28, and the upper fence is located at 0.48. This graph shows that the units inspected did exceptionally well in the realm of property management with only 22.5% of the data shown below the 80% passing score.

Figure 10, financial management, shows Q1 = 0.89 with a median of 0.75 and Q3 = 0.58. There are no outliers in this model, and the lower extreme value is 0.18. Sixty percent of financial management values are below the passing score of 80% for financial management. The sample mean is depicted as $(\bar{x}) = 0.71$ in the center of the box graph. This shows that the units inspected were under the 0.80 (passing score) threshold. Figure 11 contains the descriptive summary for Figure 10.

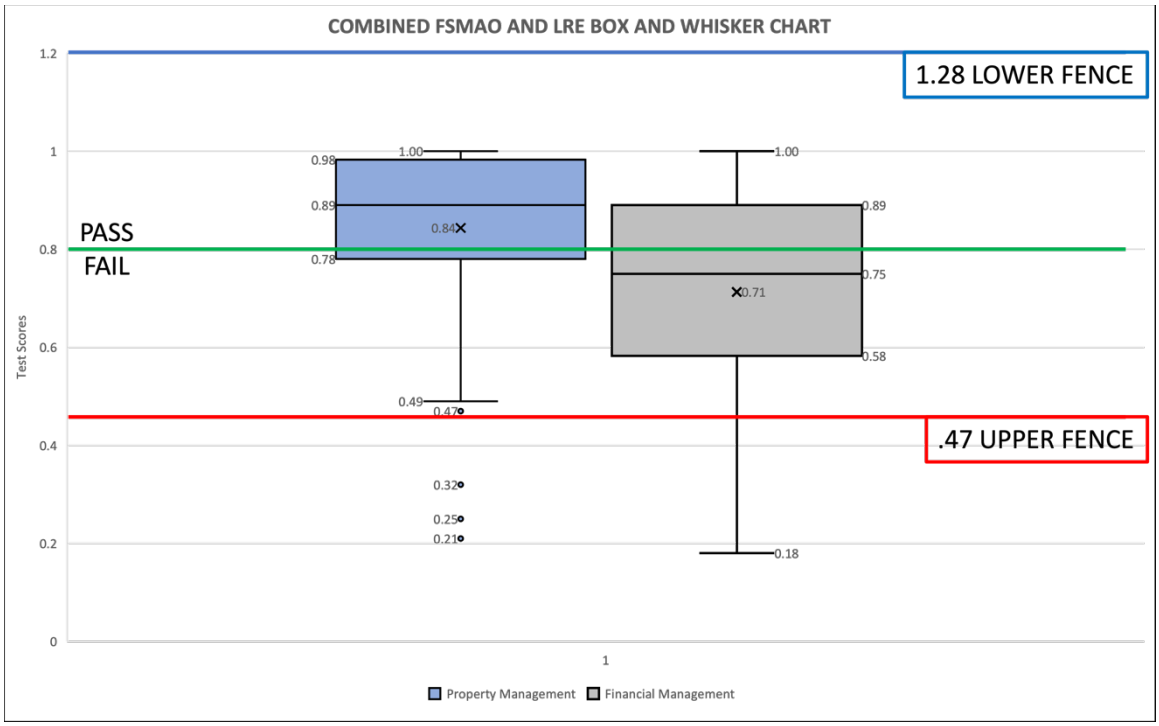


Figure 10. Combined Box and Whisker Chart

Descriptive Measure	FSMAO / LRE RESULTS	
	PROPERTY MANAGEMENT (n=30)	FINANCIAL MANAGEMENT (n=98)
MEAN	0.84	0.71
MEDIAN	0.89	0.76
X SMALLEST	0.21	0.18
X LARGEST	1.00	1.00
MIDRANGE	0.89	0.75
Q1	0.98	0.89
Q3	0.78	0.58
IQR	-0.20	-0.31
VARIANCE	0.06	0.05
STANDARD DEV	0.21	0.22

Figure 11. Summary of Descriptive Data

Figure 12 shows the mean comparison model and the data used to draw the conclusion to this data set. The significance level or *p* value of 0.0006 means that the results of the study in Figure 11 would occur in 1 out of 1,667 sample draws and, since the *p* value is less than 0.05, or a 95% confidence level, *the results are statistically significant.* This substantial finding permits the acceptance of H_1 and rejection of the null.

A lack of agility in the supply officer training curriculum *impacts* operational performance.

Mean Comparison Results	
Difference	-0.14
STANDARD ERROR	0.03
95% CI	-0.02 to -0.06
SIGNIFICANCE LEVEL	P = .0006

Figure 12. Mean Comparison of Property Management and Financial Management

C. ANALYSIS AND FINDINGS SUMMARY

The findings of this study show that the commercial procurement and fiscal scored the lowest out of the eight functional areas during FSMAO audits, and procurement scored the lowest during the LRE audit. The financial management functional areas (i.e., fiscal, commercial procurement, procurement) are what give a unit the ability to create, manage, and execute budgets and are integral in operational performance and auditability. The data collected show a trend that most units are less proficient in conducting commercial procurement, fiscal, and/or procurement based.

Quantitative data analyzed regarding operational performance proved to be statistically significant within a 95% confidence interval, showing that operational performance is being impacted by training. Additional qualitative data also exists that also suggests that training is impacting performance in the operating forces. The evidence provided by this mixed-methodology design is sufficient to *accept* H_1, and to reject *Ho.*[15]

There was no quantitative evidence discovered that would allow us to accept or reject H_2, however, substantial qualitative data suggests that acceptance of H_2 indicating that this relationship is operating in the Marine Corps' operating forces at present.

[15] H_1: A lack of agility in supply officer training curriculum content creates shortfalls in operational performance.

Ho: A lack of agility in supply officer training curriculum content does not affect operational performance.

Therefore, we accept H_2 and reject *Ho*.[16] Further research is recommended to be conducted on how operational performance is affecting retention rates.

[16] H_2: Shortfalls in operational training contributes to lower retention rates among supply officers.

Ho: Shortfalls in operational training does not affect retention rates among supply officers.

THIS PAGE INTENTIONALLY LEFT BLANK

V. CONCLUSIONS AND FUTURE WORK

In the final chapter, we discuss limitations experienced while conducting this research, recommendations based on the findings in this research, and comments on the potential of furthering this research in future studies.

A. LIMITATIONS

We faced two primary limitations while completing this questionnaire, both of which centered around the timely collection of data and information in the completion of this thesis. We were only able to acquire 12 FSMAO audits and six LRE audits that were full and complete. The relatively small data pool for audit analysis limited our ability to identify trends in the operational supply chain management performance throughout the Marine Corps. A possible future remedy is to directly contact the DC I&L to gather Marine Corps–wide audit results rather than the FSMAO offices. DC I&L could provide a wider range of trend analysis that could be conducted and provided to future NPS thesis students for analysis.

The second limitation also stemmed from data collection, but in the form of incomplete demographic inclusion for the qualitative research. When distributing the questionnaire and soliciting responses, we were unable to include a specific portion of the company-grade supply officer community—officers who separated from active service at the completion of their first operational tour. If a supply officer had a negative experience during their first operational tour and thereby decided to separate, this would have biased the survey. Further, a true statistical assessment of supply officer retention was impossible due to the inability to contact supply officers separated from active service, leaving questionnaire results biased in favor of those who chose to remain on active service after their first operational tour. One method to navigate this barrier would be to administer a questionnaire to supply officers immediately after graduating from SCMOC regarding their current desire to remain on active service and administer another questionnaire at the completion of their first tour. Including these data would identify what is causing a supply officer to separate from active service and would provide more

specific information to Training Command and DC I&L on how to improve supply officer retention.

B. RECOMMENDATIONS

Based on the data analysis conducted from the qualitative survey questionnaire and the quantitative audit results, we determined that there is a growing need to both implement changes in the SCMOC curriculum and add additional training and educational requirements to adequately prepare Marine Corps supply officers to be successful in the operating forces. The data acquired throughout the research allowed us to identify areas of concern within the supply officer field, including patterns emerging during failed FSMAO audits, supply officers readiness to execute their given duties as they check into their first operational units, and a comparative review of the welfare of supply officers during and after their first operational tours related to their preparedness to conduct financial management in the Marine Corps.

We accept both H_1 and H_2 as evidence of operational and retention-based effects occurring at the unit-level presently in the Marine Corps.[17] The data points provide the requisite evidence to realize that there are inefficiencies in the entry-level POI that are caused by the heavily bureaucratic process required to change curriculum. Presently, this process seems incapable of adapting to the rapidly changing environment, brought on by an increasing demand for precise unit-level audits, initiated by ever-expanding requirements for auditability and audit information spanning from the unit-level through the DoD level.

1. Adjust SCMOC training schedule to reflect emphasis on FSMAO and LRE.

We recommend that Training Command and the SCMOC advisors update the curriculum to reflect a similar emphasis to the areas corresponding to FSMAO and LRE audits and operational unit responsibilities. More training days should be added in the

[17] H_1: A lack of agility in supply officer training curriculum content is creating shortfalls in operational performance.

H_2: Shortfalls in operational training could be contributing to lower retention rates among supply officers.

schedule for operational financial management and procurement procedures, and the amount of training days for clerk-level property accountability and GCSS-MC interface processes should be *reduced*.

2. Implement on-the-job training in the supply officer training curriculum.

We recommend that Training Command implement on-the-job training (OJT) to instruct supply officers on basic functions of supply chain management prior to arriving at SCMOC. Integrating OJT into the SCMOC POI will allow the instructors more time to heavily focus on priority topics that have been identified as *high risk* by auditors or DC I&L. Topics identified as *low risk*, such as basic property management, can be relegated to OJT without negatively impacting new supply officers.

3. Increase entry-level training of DAI for supply officers.

We recommend immediate implementation of entry-level DAI training for supply officers at SCMOC. Our research has indicated that a relationship exists between DAI training and operational effectiveness, which needs to be swiftly addressed by SCMOC and Training Command. We expect this to impact unit readiness in both operations and in future audits. In the future, in-depth training plans for software implementations should be considered prior to employment. Training Command and its sub-elements (i.e., MOS Schools) should be included as a priority in the release of service-wide requirement changes such as GCSS-MC and DAI.

4. Improve responsiveness of the Training Command CCRB.

We recommend that in support of *Force Design 2030*, the Training Command CCRB process must become more agile to support a constantly evolving force. Currently, it takes up to 30 months to update a POI for any form of training at the Training Command level. This policy severely hampers the schools' ability to adjust curriculum swiftly to meet the emerging demands, such as the transition from SABRS to DAI. Policies and procedures for supply chain management are updated constantly, and flexibility must exist at Training Command to teach these new policies. One of the identified causes of the lack of DAI training at SCMOC is the Training Command CCRB

timeline for curriculum changes. Based on H_1, this recommendation is offered as assurance the most up-to-date courses are always taught. Some solutions to this problem include an exception-to-policy letter that bypasses the approval chain for items that are considered mission-critical. Another solution would be a waiver to teach the updated material before the approval is given to change the POI.

5. Develop an intermediate-level supply officer training program.

We recommend that Training Command develop an intermediate-level course like the Enlisted Supply Intermediate Course (ESIC). As previously noted, policies and procedures for supply chain management in the Marine Corps are constantly being updated, and the current practice is to rely on the MSE to disseminate and ensure adherence to these new processes. This creates an environment of inconsistency throughout the Marine Corps and is reflected in both the qualitative and quantitative data in this study. An intermediate-level course will improve operational performance of units with senior captains and junior majors serving in supply officer billets as well as potentially improve retention. Once a supply officer assumes their position in the operating forces, it is much harder to get them to the training that they need to maintain MOS proficiency. Offering courses following special duty assignments can optimize the performance of supply officers returning to the operating forces from various duties.

C. FUTURE STUDIES

The limitations of this research encourages future studies of similar design, as many recent changes in training and operational performance will not be documented and readily available for the next few years. Namely, we were not able to assess the impact that the lack of a thorough training implementation plan for DAI is having on audit results due to the lack of relevant audit data post-DAI. Other changes to the POI, such as the recent increase in training days to the number of training days for fiscal and commercial procurement, will affect audit results and should be captured for future research.

Additionally, future research can be conducted with a wider range of participants for the qualitative research conducted in this thesis. We were only able to contact current

active-duty personnel to participate in the questionnaire; however, it would be beneficial to include supply officers from Marine Forces Reserve and officers who have recently separated but remain part of the inactive reserve force. It is important to collect data from all supply officers who exit in one way or another, as this data may help identify other problems that supply officers face. Staying in the reserves is an option to serve on different terms that may include a lateral move from the supply MOS. Including these participants would provide a better picture of how negative operational performance and other factors affect retention.

Finally, research can be conducted at a wider scope on retention issues in the supply officer community and how the causes of low retention impact the Marine Corps operating forces at large. For example, there are likely significant impacts in maintenance, manpower management, graduate education programs, and other facets that were not discussed here. Additional review of these topics could provide Marine Corps' Training Command, Education Command, and Manpower and Reserve Affairs with more details as to how retention issues in the supply officer community are impacting operational performance across a broader spectrum.

Additional research and a partnership between NPS and SCMOC to conduct this type of research will help identify issues involving retention of high-visibility billets and training of entry-level supply officers, and work to provide current data that will give SCMOC the data points to make future decisions impacting the supply officer MOS..

D. CONCLUSION

The purpose of this research was to identify and to provide evidence of shortfalls and to recommend improvements to entry-level and follow-on training for company-grade supply officers throughout the Marine Corps. We determined that a mixed-methods approach to the research question would provide the most complete picture of the current state of the Marine Corps' supply officer community. This determination was based on a

review of relevant literature as well as the nature of the research question on which this thesis was based.[18]

We used the qualitative portion of this research to address one aspect of the research question that could only truly be answered by receiving objective data from the supply officer community. Data gathered from the questionnaires showed the presence of a relationship between shortfalls in training, in operational performance, and in retention. Ultimately, there is no way to identify this relationship relying solely on using descriptive statistical analysis. Instead, using the data received from the current supply officer community, we identified a possible relationship between training, poor operational performance, and retention. Supply officers' negative experiences during their first operational tour are a problem that Training Command will need to address to improve the health of the supply officer community and to support the logistical requirements for *Force Design 2030*. By partnering with NPS, HQMC can provide the requisite data for analysis by future thesis students, which could inform decision makers responsible for Training Command's MOS schoolhouse curricula. Thereby, enabling Training Command leadership to make informed decisions, pertaining to the supply MOS, going forward.

The quantitative aspect of this research provides a fundamental understanding of the operational performance of supply chain management throughout the Marine Corps active service. Specifically, the discrete analysis shows a trend in negative financial management performance with respect to other functional areas of supply, with fiscal and commercial procurement receiving average scores of 64% and 77%, respectively, on FSMAO audits analyzed in this research. These data show that the Marine Corps, in general, is *underperforming* in the financial management aspect of supply chain management. While no direct relationship is identified to SCMOC or the supply officer community, these data provide more context to the objective data gained from the qualitative research conducted as part of this study, contextually indicating that there is a

[18] Do shortfalls or gaps in financial management training for entry-level 3002 supply officers contribute to lower operational performance or retention rates?

problem with supply officer retention and that there is a problem with updating curriculum in a timely manner.

Our conclusions, based on this mixed-method analysis, produced the recommendations listed to provide supply officers with more tools to succeed in the operational forces, thereby improving both retention and operational performance. A fundamental understanding of the trends in audit performance, combined with generalized, objective data from the operating forces regarding how performance is related to retention, shows that improving training could lead to both improved operational performance and retention. In order to sufficiently support the operational requirements, set forth in *Force Design 2030* and meet new audit requires set forth by Congress, the Marine Corps must modernize the training curriculum for supply officers acutely enhance the agility and the operational focus of entry-level training.

THIS PAGE INTENTIONALLY LEFT BLANK

VI. APPENDIX

A. QUESTIONNAIRE

Supply Officer Questionnaire Concerning 3002 MOS Training

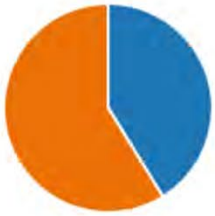
51	02:19	Closed
Responses	Average time to complete	Status

1. Were you adequately prepared by Supply Chain Management Officer Course (SCMOC) for your first operational deployment or exercise?

Yes	20
No	31

2. Were you adequately prepared by SCMOC for your first Field Supply and Maintenance Analysis Office (FSMAO) inspection?

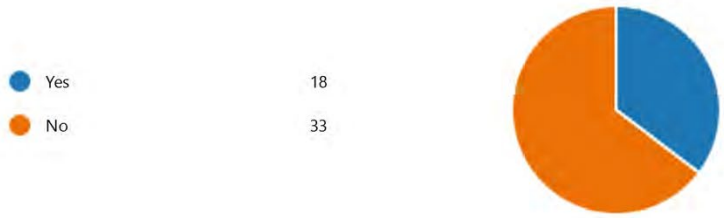
Yes	21
No	30



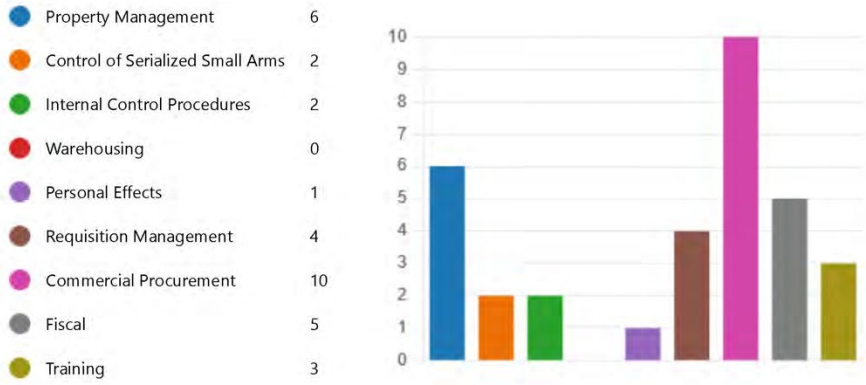
3. Did your unit fail any portion of the FSMAO inspection?

1 of 3 9/25/2022, 11:16 AM

Did your unit fail any portion of the PSMAO inspection?



4. If yes to Question 3, which section did your unit fail?



5. If you attended SCMOC prior to October 2020, did you receive SABRS training?

6. If you attended SCMOC after October 2020, did you receive DAI training?

Yes	1
No	20
Not Applicable	29

7. Has your experience during your first operational tour as a Supply Officer affected your desire to remain on active duty?

Yes	44
No	7

8. If yes to Question 7, were the effects of your first tour on your desire to remain on active duty:

Positive	15
Negative	30

9. Would you attend a Captain-level intermediate supply officer course if offered?

Yes	42
No	9

B. SUPPLY OFFICER RESPONSIBILITIES

0208 SUPPLY OFFICER/ACCOUNTABLE PROPERTY OFFICER (APO)

020801. Per reference (g), an APO is an individual who, based on his or her training, knowledge, and experience in property management, accountability, and control procedures, is appointed by proper authority to establish and maintain an organization's accountable property records, systems, and/or financial records, in connection with property, irrespective of whether the property is in the individual's possession. This includes the requirement for maintaining a complete trail of all transactions, suitable for audit, and the ability to implement and adhere to associated internal controls. Within most Marine Corps organizations, the term "accountable property officer" is synonymous with the term "supply officer." Although most consumer level supply accounts have a supply officer assigned to execute supply administration and property accounting functions for the command, unique organizations like Marine Corps Logistics Command (MARCORLOGCOM) and Marine Corps Systems Command may appoint APOs to manage various supply accounts for the command. In all cases, the CO/AO shall designate, in writing, a supply officer/APO to perform supply and financial management functions for the command. Delegation of accounting responsibilities to the supply officer/APO does not relieve the CO/AO of accountability. Specific responsibilities of a supply officer/APO are as follows:

A. Serve as a special staff officer to the CO/AO.

B. As a member of the CO's/AO's staff, ensure that the CO/AO is made fully aware of the command's current supply and fiscal postures.

C. Post changes to the property records for all transactions as required (e.g., loan, loss, damage, disposal, inventory adjustments, item modification, transfer, and sale).

D. Designate custodial areas within an accountable area and appoint property custodians, in writing, for each custodial area designated.

E. Monitor the acquisition, storage, utilization, transfer, and disposal of property.

F. Properly and uniquely identify and mark property received and issued as appropriate.

G. Issue custody receipts or similar documents for all property assigned to an individual or organization.

H. Evaluate culpability when property loss has been reported; report and recommend appropriate action and assist in investigations, as required, according to established procedures (see reference (b)).

I. Certify that property assigned to a unit or organization is properly inventoried; perform a joint physical inventory (with the gaining organization) when transferring the organization's property account; properly execute and sign required documentation.

J. Develop physical inventory plans and procedures, schedule physical inventories, and assist in their completion, in accordance with Volume 4 of this Directive.

K. Ensure electronic interfaces are used between the APSR and mandated enterprise systems (e.g., Wide Area Workflow).

L. Recommend corrective procedural changes to the CO/AO so that detrimental supply situations may be prevented or corrected.

020802. In most cases, the supply officer/APO will also assume the roles and responsibilities of fiscal/budget & accounting officer, supply resource manager, certifying officer, and supply automated information system (AIS) administrator as follows:

A. Fiscal/budget & Accounting Officer

In the absence of a comptroller, the CO/AO shall designate in writing, via an appointment letter and a DD Form 577, "Appointment/Termination Record – Authorized Signature," a fiscal/budget & accounting officer to perform financial management functions for the command. In most organizations, fiscal/budget & accounting officer duties are inherent to the supply officer/APO billet and include the following responsibilities:

1. Provide guidance and direction of financial matters throughout the organization as a staff service to the CO.

2. Track all activities/programs that will have a financial impact on the organization. This includes budget plans and program schedules.

3. Perform applicable budget formulation, execution, and review functions for future, current, and expired fiscal years.

4. Provide guidance to fund managers responsible for the administration of travel payments (i.e., advances and settlements).

5. Ensure budget authorizations and allotments are passed to subordinate elements in a timely manner.

6. Maintain oversight of transactions posted in the accounting system to ensure validity and accuracy of postings. These evaluations should include proper usage of funds, coding structures used, validity of obligations, and timely posting of financial information.

7. Conduct evaluations and analyses of fund manager activities to assist in the prompt detection and correction of problems in connection with established financial procedures, practices, records and accounting system problems and deficiencies.

8. Ensure proper records and source documents supporting fund execution are maintained by appropriate activities such as fund managers.

9. Ensure proper use of appropriations by purpose, time, and amount to include meeting the criteria of bona-fide need.

10. Train delegated fund holders in the proper utilization of the accounting system.

11. Act as a liaison with the Defense Finance and Accounting Service (DFAS) on all accounting issues.

12. Maintain required currency in fiscal training.

B. Supply Resource Managers

Supply Resource Managers must be appointed in writing by the CO/AO via an appointment letter and a DD Form 577. Although the responsibility for oversight of financial management belongs to the comptroller or a fiscal/budget & accounting Officer, supply resource managers receive authorized funds on behalf of the CO/AO as a resource to accomplish and execute their assigned missions. In most organizations, supply resource manager duties are inherent to the supply officer/APO billet. In some situations, the CO/AO may allocate funds to support a given function which is subsequently administered by a staff officer who has primary cognizance over the function supported (e.g., facilities office may oversee facilities requisitions, or the consolidated

1. Compiling and executing the budget in accordance with the financial plan for the current fiscal year.

2. Monitoring the execution of the financial plan for all fiscal years available for obligation and five additional years thereafter.

3. Preparing source documents.

4. Recording accounting transactions into the accounting system.

5. Reconciling the accounting system with source documents on a cyclic basis.

6. Maintaining financial records and source documents in accordance with current directives.

7. Identifying and providing information to the comptroller on Unmatched Disbursements and Negative Unliquidated Obligations on error and exception listings.

8. Conducting Unliquidated Orders and outstanding travel order validations.

9. Performing the functions as the supply AIS administrator for funding execution automated systems.

C. Certifying Officer

The CO/AO will appoint the supply officer/APO as the certifying officer in writing via an appointment letter and a DD Form 577. Certifying officers should be a supervisor with knowledge of the subject matter for which assigned, background or experience in preparation of vouchers for payment, knowledge of appropriations and other funds and accounting classifications, and knowledge of the payment process (e.g., availability of funds and location of designated paying and accounting offices). Responsibilities of the certifying officer include:

1. Attesting to the correctness of statements, facts, accounts, and amounts appearing on payment vouchers, and certifying the vouchers as correct and proper for payment.

2. Certifying and forwarding payment vouchers to the disbursing office.

3. Providing oversight to departmental accountable officials (DAOs) to strengthen internal controls. DAOs (i.e., Responsible officers, supply resource manager/fund holders) provide information, data, or services to certifying officers upon which the latter rely on to properly certify vouchers for payment.

4. Providing oversight and training to others involved in the payment certification process (e.g., DAO's, fund holders, receipt and acceptors) in order to prevent incorrect or erroneous payments.

D. Supply AIS Administrator

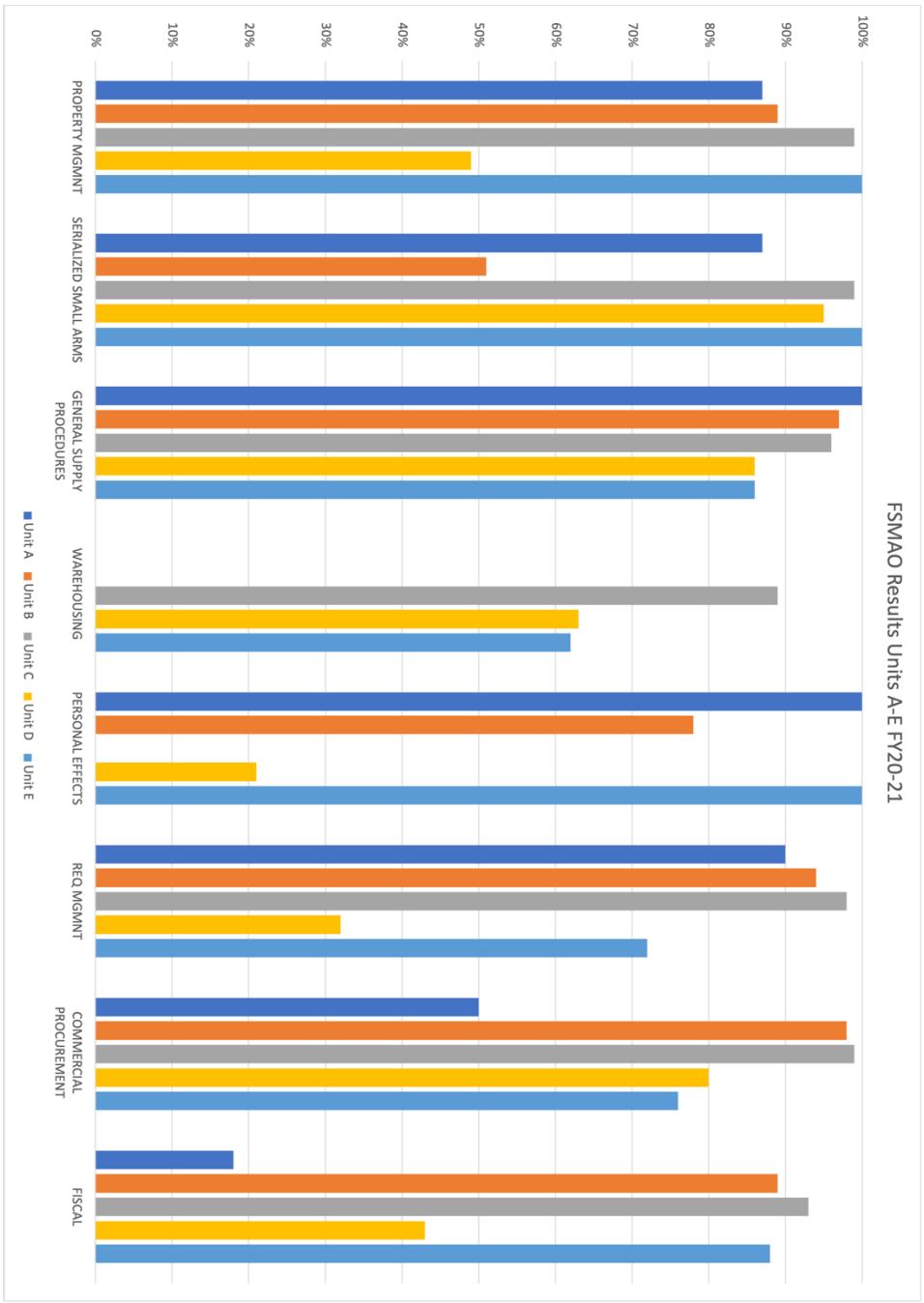
The role of the supply AIS administrator is inherent within the supply officer/APO billet and must be identified in the appointment of the supply officer/supply resource manager by the CO/AO. As the supply officer/supply resource manager is responsible for overall supply administrative functions and funding execution for the command, he/she must maintain controls for access to systems that are used to obligate the activity's appropriations or alter its accountable/custodial records and balances. Responsibilities of the supply AIS administrator include:

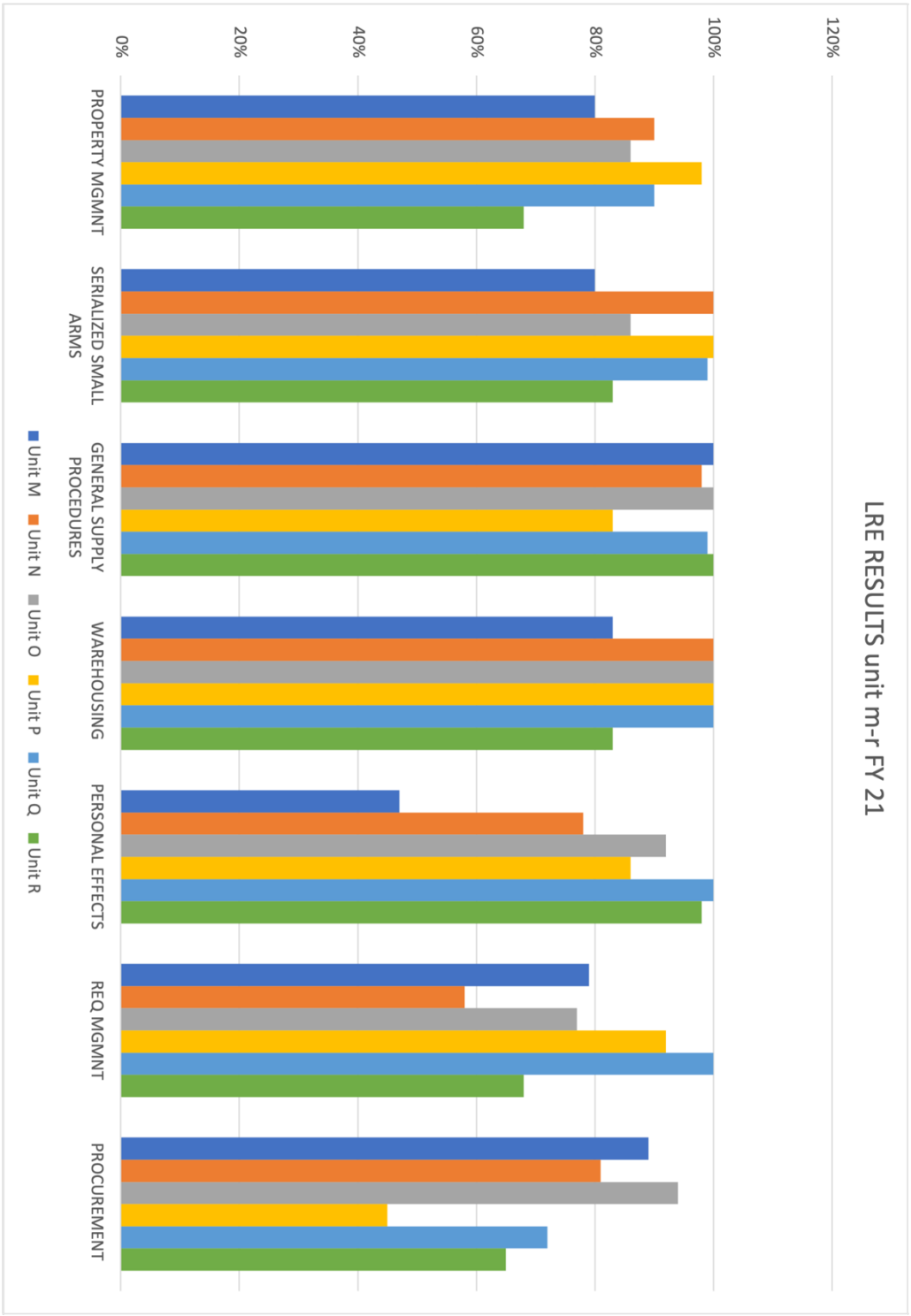
1. Maintaining all requests for access to automated system(s) used to support purchase requests, requisitioning, receipt and acceptance, equipment accountability, financial management, and other supply chain management functions.

2. Managing all system authorization access requests for supply AIS functions.

3. Recommending the appointment of additional supply AIS administrators to assist in the performance of supply AIS administrator responsibilities as required. Other pseudonyms for this function include group administrator, unit user account manager (UUAM), user administrator, workflow manager, etc.

C. FSMAO AND LRE DATA




LRE RESULTS unit m-r FY 21
0%
20%
40%
60%
80%
100%
120%
PROPERTY MGMNT
SERIALIZED SMALL ARMS
GENERAL SUPPLY PROCEDURES
WAREHOUSING
PERSONAL EFFECTS
REQ MGMNT
PROCUREMENT
Unit M
Unit N
Unit O
Unit P
Unit Q
Unit R

I. REFERENCES

9m Consulting. 9m Consulting. (2018, December 19). *Lewin's change model*. https://9mconsulting.com/newsletter/lewins-change-model/

Abbe, A., Allen, C. D., Galvin, T., Hosie, M., & Sipos, M. (2021). *Misunderstanding organizational change: Military stand-downs don't stand alone*. War on the Rocks.

Anderson, D. R., Sweeney, D. J., & Williams, T. A. (2014). *Essentials of modern business statistics 6e* (Vol. 6). Cengage Learning.

Audit of Department of Defense Financial Statements, 10 U.S.C. § 240a (2020).

Audit the Pentagon Act of 2021, S. 1707, 117th Cong. (2021). https://www.congress.gov/bill/117th-congress/senate-bill/1707/text?r=1&s=1&format=txt

Bale, C. I. (2021). Why the Pentagon can't fully account for all its assets —in Afghanistan or anywhere else. *The Washington Post*. https://www.washingtonpost.com/politics/2021/09/22/why-pentagon-cant-fully-account-all-its-assets-afghanistan-or-anywhere-else/

Baran, B. E., Filipkoski, J. N., & Stockwell, R. A. (2018). Organizational change: Perspectives from human resource management. *Journal of Change Management*. https://www.tandfonline.com/doi/abs/10.1080/14697017.2018.1502800

Berger, D. H. (2019). *Directing leaders at all levels to support the Marine Corps financial statement audit* (CMC White Letter 2-19). United States Marine Corps.

Berger, D. H. (2020). *Force design 2030.* United States Marine Corps. https://www.marines.mil/Force-Design-2030/

Berger, S., Blitzer, M., & Häckel, B. (2020). *Approaching digital transformation: Development of a multi-dimensional maturity model*. European Conference on Information Systems. https://www.researchgate.net/profile/Stephan-Berger-2/publication/342262246_Approaching_Digital_Transformation_-_Development_of_a_multi-dimensional_Maturity_Model/links/5eeb4e1c458515814a676d61/Approaching-Digital-Transformation-Development-of-a-multi-dimensional-Maturity-Model.pdf

Bloomberg, M. (2022, August 8). *Military recruitment woes endanger national security*. https://www.mikebloomberg.com/news/op-ed-military-recruitment-woes-endanger-national-security/

Britzky, H. (2022). *Military leaders urge Americans to help them overcome 'misperceptions' of military service*. Task & Purpose. https://taskandpurpose.com /news/military-secretaries-op-ed-wall-street-journal/#:~:text=Military% 20leaders% 20urge%20Americans%20to%20help%20them%20overcome, Oct%2026%2C%202022%2012%3A54%20PM%20News%20Military%20Life

Bublé, C. (2021). *The defense department fails its audit again, but officials have "no doubt" it will eventually pass*. Government Executive. https://www.govexec.com/ management/2021/11/defense-department-fails-its-audit-again-officials-have-no-doubt-it-will-eventually-pass/186865/

USASpending.gov. (n.d.). *Department of Defense (DOD)*. Retrieved August 30, 2022, from https://www.usaspending.gov/agency/department-of-defense?fy=2022

Chappell, B. (2017, December 8). *Pentagon announces first-ever audit of the Department of Defense.* NPR. https://www.npr.org/sections/thetwo-way/2017/12/08/569394885/pentagon-announces-first-ever-audit-of-the-department-of-defense

Chappell, B. (2021, May 19). *The Pentagon has never passed an audit. Some senators want to change that.* NPR. https://www.npr.org/2021/05/19/997961646/the-pentagon-has-never-passed-an-audit-some-senators-want-to-change-that

Chief Financial Officers Act of 1990, H.R. 6587, 101st Cong. (1990). https://www.congress.gov/bill/101st-congress/house-bill/5687

Chinn, D., & Dowdy, J. (2014, December 1). *Five principles to manage change in the military*. McKinsey and Company. https://www.mckinsey.com/industries/public-and-social-sector/our-insights/five-principles-to-manage-change-in-the-military

Chunn, K. (2020, December). Talent management: Harvest the high hanging fruit. *Marine Corps Gazette*, 36–39. https://mca-marines.org/wp-content/uploads/36-Talent-Management.pdf

Collins, J. (2001). Good to great: Why some companies make the leap and others don't. Harper Business.

Cummings, S., Bridgman, T., & Brown, K. G. (2015). Unfreezing change as three steps: Rethinking Kurt Lewin's legacy for change management. *Human Relations*, *69*(1). https://doi.org/10.1177/0018726715577707

Defense Logistics Agency. (2022, October 27). *Defense Agencies Initiative*. https://www.dla.mil/Information-Operations/Services/Defense-Agencies-Initiative/

Errida, A., & Lofti, B. (2021). The determinants of organizational change management success: Literature review and case study. *International Journal of Engineering Business Management*, *13*. https://doi.org/10.1177/18479790211016273

Field Supply and Maintenance Analysis Office–West. (2022). *FY23 FSMAO checklist training* [Unpublished document].

Forsling, C. (2022). *Preparing for change is as important as change itself: Change management and force design 2030*. Center for International Maritime Security. https://nosi.org/2022/05/27/preparing-for-change-is-as-important-as-change-itself-change-management-and-force-design-2030/#:~:text=Preparing%20For%20Change%20is%20as%20Important%20as%20Change,changes%20being%20executed%20in%20a%20very%20short%20time.

Galvin, T. (2018). *Leading change in military organizations: Primer for senior leaders* (1st ed.). U.S. Army War College. https://apps.dtic.mil/sti/pdfs/AD1124769.pdf

Ganti, A. (2022, June 28). *Corporate finance*. Investopedia. https://www.investopedia.com/terms/c/central_limit_theorem.asp

Glen, S. (1993). *Interquartile range (IQR): What it is and how to find it*. Statistics How To. https://www.statisticshowto.com/probability-and-statistics/interquartile-range/

Gnanarajah, R. (2019). *Department of Defense first agency-wide financial audit (FY2018): Background and issues for Congress* (CRS Report No. R46067). Congressional Research Service. https://crsreports.congress.gov/product/pdf/R/R46067

Government Accountability Office. (2022). *Financial audit: FY 2021 and FY 2020 consolidated financial statements of the U.S. government* (GAO-22-105122). https://www.gao.gov/products/gao-22-105122

Grady, J. (2021, August 4). *Harker: Navy, Marine Corps must fix more business practices to improve readiness*. USNI News. https://news.usni.org/2021/08/04/harker-navy-marine-corps-must-fix-more-business-practices-to-improve-readiness

Graupp, P. (2022). *Train-the-trainer: Model, methodology and insights*. Retrieved October 19, 2022 from https://www.twi-institute.com/train-the-trainer-model/

Hall, B. M. (2001). *First-term enlisted male Marines' satisfaction with job characteristics: Evidence from the 1999 USMC Web-Based Retention Survey* [Master's thesis, Naval Postgraduate School]. Defense Technical Information Center. https://apps.dtic.mil/sti/pdfs/ADA390325.pdf

Homeland Security Today. (2022, April 22). *CACI awarded $258 million defense agencies initiative contract*. https://www.hstoday.us/industry/industry-news/caci-awarded-258-million-defense-agencies-initiative-contract/

Irion, A. D. (2020). Prepare to be disrupted: Operate logisitics at the edge of technology. *Marine Corps Gazette*, WE4–WE8.

Irion, A. D., Szekely, A. J., Hall, G. B., & Rigle, M. R. (2022). Field supply and maintenance analysis office: More than just analyses. *Marine Corps Gazette*, WE9–WE13.

Kenney, C. (2021, November 17). *Marine Corps seeks "fundamental redesign" to recruiting, retention, careers*. Defense One. https://www.defenseone.com/policy/2021/11/marine-corps-seeks-fundamental-redesign-recruiting-retention-careers/186600/

Ladkin, A. (2018, May). *Advantages and disadvantages of a box plot.* Sciencing. https://sciencing.com/advantages-disadvantages-box-plot-12025269.html

Lawless, B. (2018, May 16). *United States Marine Corps ground supply chain management: Fact or fiction* [Master's thesis, University of Wisconsin–Platteville]. MINDS@UW. https://minds.wisconsin.edu/handle/1793/78570?show=full

Lewin, K., Maccoby, E. E., & Newcomb, T. M. (1958). *Readings in social psychology.* Holt, Rinehart & Winston.

Maldonado, A. R., Viana, A. E., & Costa, R. (2018). *Marine Corps officer talent management for the 21st century* [MBA professional project, Naval Postgraduate School]. Defense Technical Information Center. https://apps.dtic.mil/sti/citations/AD1069524

Maucione, S. (2018). *Amid persistent accounting weaknesses, DoD fails to pass its first-ever financial audit*. Federal News Network. https://federalnewsnetwork.com/defense-main/2018/11/dods-audit-failure-is-entrenched-in-it-issues-and-lost-inventory/

McFarland, W. C., Jr. (2018). *Post-first term enlistment retention analysis for the selected Marine Corps Reserve* [Master's thesis, Naval Postgraduate School]. Defense Technical Information Center. https://apps.dtic.mil/sti/citations/AD1060000

Mehta, A. (2018). The Pentagon failed its audit, but officials aren't surprised. *Defense News*. https://www.defensenews.com/pentagon/2018/11/15/the-pentagon-failed-its-audit-but-officials-arent-surprised/#:~:text=%28Phototreat%2FGetty%20Images%29%20WASHINGTON%20%E2%80%94%20The%20U.S.%20Department%20of,was%20widely%20expected%20the%20audit%20would%20find%20issues.

Microsoft Corporation. (n.d.). *Microsoft forms*. Retrieved October 21, 2022, from https://forms.office.com/

Mindeman, N. M. (n.d.). *SCMOC POI snapshot* [Unpublished Manuscript].

Mindeman, N. M. (2022, March). *Information Age T&R reviews and CCRBs* [Unpublished Manuscript].

Nikolić-ðorić, E., Čobanović, K., & Lozanov-Crvenković, Z. (2006). Statistical graphics and experimental data. *ICOTS*, 1–4.

Office of the Under Secretary of Defense. (2021). *Department of Defense agency financial report (Fiscal Year 2021).* Department of Defense. https://comptroller.defense.gov/Portals/45/Documents/afr/fy2021/DoD_FY21_Agency_Financial_Report.pdf

Phillips, J. R. (1983). Enhancing the effectiveness of organizational change management. *Human Resource Management*, 183–199. https://onlinelibrary.wiley.com/doi/abs/10.1002/hrm.3930220125

Reiley, P. J. (2016, September 8). *Change management bootcamp: Peter J. Reiley explores organizational psychology and the military*. WalkMe. https://change.walkme.com/change-management-bootcamp-peter-j-reiley-explores-organizational-psychology-military/

Robert, C. (2018, June 15). *What is the train-the-trainer model and how can your organisation benefit from it?* SessionLab. https://www.sessionlab.com/blog/train-the-trainer-model/

Salmond, Susan EdD, RN. *Taking the Mystery out of Research: Box and Whisker Plots.* Orthopaedic Nursing: January 2007 - Volume 26 - Issue 1 - p 33. https://journals.lww.com/orthopaedicnursing/Citation/2007/01000/TAKING_THE_MYSTERY_OUT_OF_RESEARCH__Box_and.10.aspx

Sanders, B. (2021, May 19). *Sanders, Grassley, Wyden, Lee make bipartisan push to end wasteful Pentagon spending*. https://www.sanders.senate.gov/press-releases/news-sanders-grassley-wyden-lee-make-bipartisan-push-to-end-wasteful-pentagon-spending/

Serbu, J. (2022). *Four years into DoD financial audits, IG says progress has stalled*. Federal News Network. https://federalnewsnetwork.com/on-dod/2022/06/four-years-into-dod-financial-audits-ig-says-progress-has-stalled/

Snow, S. (2018, November 5). Facing retention issues, the Corps needs to recruit highest number of Marines in a decade. *Marine Corps Times*. https://www.marinecorpstimes.com/news/your-marine-corps/2018/11/05/faced-with-retention-issues-the-corps-needs-to-recruit-highest-number-of-marines-in-nearly-a-decade/

Stippey, B. (2021). *Following the money just became easier.* United States Marine Corps. https://www.marines.mil/News/News-Display/Article/2829697/following-the-money-just-became-easier/

Stone, M. (2021). *U.S. Pentagon fails fourth audit but sees steady progress*. Reuters. https://www.reuters.com/business/aerospace-defense/us-pentagon-fails-fourth-audit-sees-steady-progress-2021-11-16/

Stone, M., & Ali, I. (2018). *Pentagon fails its first-ever audit, official says*. Reuters. https://www.reuters.com/article/us-usa-pentagon-audit/pentagon-fails-its-first-ever-audit-official-says-idUSKCN1NK2MC

Swanson, J. (2019). *Effect of manpower policy changes on retention and promotions in the U.S. Marine Corps* (SESUG Paper 169-2019). https://www.lexjansen.com/sesug/2019/SESUG2019_Paper-169_Final_PDF.pdf

U.S. Marine Corps. (2013). *Field Supply and Maintenance Analysis Office (FSMAO) program* (MCO 4400.160). https://www.marines.mil/portals/1/Publications/MCO%204400.160.pdf

U.S. Marine Corps. (2015). *Marine Corps formal school management policy guidance* (NAVMC 1553.2). https://www.marines.mil/portals/1/Publications/NAVMC%201553.2.pdf?ver=2016-06-09-094625-947

U.S. Marine Corps. (2018a). *Fiscal Year 2018 financial management report.* https://media.defense.gov/2018/Nov/16/2002063985/-1/-1/1/USMC_FY2018_AFR.PDF

U.S. Marine Corps. (2018b, July 26). *Management of property in the possession of the Marine Corps. Volume 3: Retail supply management* (MCO 4400.201 V-3).

U.S. Marine Corps. (2019). *Marine officer MOS assignment handbook.*

U.S. Marine Corps. (2020a). *Supply officer's internal controls handbook* (NAVMC 4000.5D).

U.S. Marine Corps. (2020b, February 24). *Support to the FY20 Marine Corps financial statement audit* (MARADMIN 106/20). https://www.marines.mil/News/Messages/Messages-Display/Article/2092456/support-to-the-fy20-marine-corps-financial-statement-audit/

U.S. Marine Corps. (2021). *Talent management 2030.* https://www.hqmc.marines.mil/Portals/142/Users/183/35/4535/Talent%20Management%202030_November%202021.pdf

Wickham, H., & Stryjewski, L. (2012). *40 years of boxplots.* https://vita.had.co.nz/papers/boxplots.html

Yang, J. (2018). The Pentagon doesn't know where its money goes. *New York Times*. https://www.nytimes.com/2018/12/01/opinion/sunday/pentagon-spending-audit-failed.html

Acquisition Research Program
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net