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The Expeditionary Effect on Contract Management Process Maturity in Army Contracting Support Brigades

December 2024

MAJ David P. Heikkila, USA CPT Jong D. Lee, USA MSG Jason D. Shettles, USA

Thesis Advisors: Dr. Rene G. Rendon, Associate Professor Kelley Poree, Lecturer

Department of Defense Management

Naval Postgraduate School

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Prepared for the Naval Postgraduate School, Monterey, CA 93943

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ABSTRACT

This research investigates the impact of expeditionary environments on contract management process maturity in U.S. Army Contracting Support Brigades (CSBs), specifically focusing on the 409th, 411th, and 414th CSBs. This research hypothesizes that the transition from a garrison to expeditionary setting will negatively affect contract management process maturity and measures this by using the Contract Management Maturity Model (CMMM) to assess variations in process maturity levels between garrison and expeditionary contexts through a comprehensive survey of contracting personnel. By analyzing self-assessments of process maturity, the study aims to provide actionable recommendations for enhancing operational effectiveness and ensuring mission success in complex environments.

The findings indicate varying levels of process maturity across the 409th and 411th CSBs, but there were not enough qualified responses from the 414th to measure their process maturity. The two CSBs that were able to be measured both had relative weaknesses in areas of contract administration and contract closeout and a strong correlation was identified between management support and the process maturity of these CSBs in each phase. Not enough expeditionary data were obtained to measure process maturity expeditionary operations, so the hypothesis regarding the effect of the expeditionary environment was unable to be adequately tested.





ABOUT THE AUTHORS

MAJ David Heikkila is an Army Acquisitions Officer, commissioned from the U.S. Military Academy at West Point as an Infantry Officer. He has served in the 82nd Airborne, the Old Guard, the 1st Infantry Division, and the 5th Ranger Training Battalion. He and his wife, Sarah, are the proud parents of two daughters, Charlotte and Amelia. After graduating from Naval Postgraduate School, he will serve as a project engineer at Joint Activities, U.S. Army Headquarters Battalion.

CPT Jong (Ryan) Lee is an Army Acquisition Officer, commissioned through the U.S. Army ROTC program at the Georgia Institute of Technology, where he earned a Bachelor of Science in Building Construction. He has served in the 16th Sustainment Brigade, United States Army Europe and Africa (USAEUR-AF) in Germany, and the 2ID Sustainment Brigade, United States Forces Korea (USFK) in the Republic of Korea. He is married to his beautiful wife, Amy, and together they are proud parents of two boys, Riley and Ryder. After graduating from the Naval Postgraduate School, he will serve as a Contracting Support Officer in the 918th Contracting Battalion and Mission & Installation Contracting Command at Fort Carson, CO.

MSG Jason Shettles is an Army Contracting NCO. He enlisted in 2006 and served in military occupational specialties 31B Military Police and 29E Electronic Warfare before reclassifying to 51C Contracting in 2013. He has served in the 2nd Infantry Division, 4th Infantry Division, 101st Airborne Division (Air Assault), and Army Contracting Command. He and his wife Liezabeth are the proud parents of their daughter, Esmeralda. After graduating from the Naval Postgraduate School, he will be reporting to the 918th Contracting Battalion and Mission & Installation Contracting Command at Fort Carson, CO, where he will serve as a Contracting Detachment Sergeant.





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LIST OF ACRONYMS AND ABBREVIATIONS

ACC	Army Contracting Command
AFARS	Army Federal Acquisition Regulation Supplement
ANSI/EIA	American Nationals Standards Institute/Electronic Industries Alliance
BtB	Back-to-Basics (Defense Acquisition Workforce Certification)
CMMAT	Contract Management Maturity Assessment Tool
CMMM	Contract Management Maturity Model
COR	Contracting Officer's Representative
CSB	Contracting Support Brigade
DoD	Department of Defense
EVM	Earned Value Management
EVM ³	Earned Value Management Maturity Model
FY	Fiscal Year
ICP	Invited Contractor Program
IMCOM	Installation Management Command
OCONUS	Outside the Continental United States
PMMM	Project Management Maturity Model
RA	Requiring Activity
RCO	Regional Contracting Office
SOFA	Status of Forces Agreement
USFK	United States Forces Korea





I. INTRODUCTION

This chapter introduces the research on exploring the effect of an expeditionary environment on contract management process maturity. We begin with a brief background of the field of research, then provide the purpose for this research, and the research questions that we intend to answer. This chapter continues with outlining the research methodology, a discussion of the benefits and limitations of the research, and concludes with the organization of the report. To provide context for this research, the following section explores the foundational background of expeditionary contracting and its significance within U.S. Army operations.

A. BACKGROUND

Two fundamental aspects of the U.S. Army are that it spends a lot of money, and it operates overseas (Gansler et al., 2007). Where these two aspects intersect is the field of expeditionary contracting, that is, spending tax dollars overseas. In 2007, the secretary of the Army appointed the "Commission on Army Acquisition and Program Management in Expeditionary Operations" (Gansler et al., 2007, p 19). This independent commission identified a plethora of issues, including shortages of military manpower, training, and contracting competency; failure to prioritize contracting processes and personnel; as well as larger policy and regulatory shortfalls and oversights (Gansler et al., 2007). The deficiency in contracting competency among U.S. Army officers stationed overseas exacerbates inefficiencies and mismanagement within military operations.

The report highlights a critical gap in Army officers' acquisition and contracting experience compared to their counterparts in other branches who benefit from clearer career paths (Gansler et al., 2007). This lack of training and leadership severely undermines officers' ability to manage military procurement complexities in expeditionary environments and leads to widespread fraud and abuse (Gansler et al., 2007). Moreover, the report identifies a significant shortfall in post-award contract management, which amplifies challenges in contract execution and underscores the need for a more structured approach to this phase of contract management (Gansler et al., 2007). The report also reveals a profound disconnect between operational needs and



institutional support, indicating a dire need for a systemic overhaul of Army contracting practices (Gansler et al., 2007). The commission further emphasizes the critical but underrecognized role of contracting in expeditionary operations, which significantly impacts mission success (Gansler et al., 2007). One way in which contracting organizations can significantly impact mission success and improve upon the problems identified by the Gansler report is by having capable and mature contract processes. One tool developed to measure contract management process maturity is the Contract Management Maturity Model (CMMM).

The Contract Management Maturity Model has been developed to help contracting and acquisition professionals identify how systemic contract management issues affect their organizations, measure their units' contract management efficiency, and record progress (Garrett & Rendon, 2005). The CMMM has aided numerous Department of Defense (DoD) organizations in assessing their organizations' contract management process capability, identifying weaknesses in those processes, and providing recommendations for increasing the maturity level of those processes. While this model has shown effectiveness in measuring domestic organizations' contract management process maturity, it has never been applied to an organization outside the continental United States (OCONUS). As all expeditionary contracting is OCONUS, there are no CMMM assessment data on expeditionary contracting organizations. The U.S. Army can benefit from addressing this lack of data and conducting process capability assessments on expeditionary contracting organizations.

B. PURPOSE

The purpose of this research is to conduct a process capability assessment on OCONUS Army Contracting Organizations to determine if there is a change in process maturity caused by the expeditionary environment. The expanded purpose is to collect these organizations' self-assessments of process maturity levels in their home organizations (*garrison* environments) and determine whether they assess different process maturity levels when they deploy or move forward to *expeditionary* locations. This study builds upon findings from earlier uses of the CMMM and analyzes whether changes in process maturity occur when OCONUS contracting personnel move into



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C. RESEARCH QUESTIONS

The CMMM evaluates each organization's contracting management process maturity across six key process areas, both at the home station and in expeditionary locations. To fulfill the purpose of our research, we have developed the following research questions:

- 1. What is the contract management process maturity level for the 409th, 411th, and 414th CSBs at their home stations?
- 2. What is the contract management process maturity level for the 409th, 411th, and 414th CSBs at their expeditionary locations?
- 3. Based on the comparison of process maturity levels, what are the effects of expeditionary contracting on the U.S. Army's contract management processes, if any?
- 4. What process improvement recommendations can be made to these brigades to improve process maturity?

D. METHODOLOGY

The methodology for this research consists of conducting a maturity assessment of each organization within their garrison environment as well as their expeditionary environment. The researchers employ a qualitative data collection method to provide comprehensive analysis of contract management process maturity levels within the 409th, 411th, and 414th CSBs. The primary tool for data collection is the CMMAT, which involves a 62-question online survey. The CSBs' leadership will be provided a link to an online survey, which will then be forwarded to experienced members of the CSBs in Germany, Korea, and Italy. The target population for this research is current members of the 409th, 411th, and 414th CSBs who have at least one year of experience and are certified contract specialists or contracting officers within these brigades.

We will collect data using the CMMAT, which solicits personal, subjective opinions of contracting personnel regarding their organization's process maturity levels. The CMMAT survey collects information in two phases. In the Garrison Phase,



respondents assess the process maturity levels within their home organizations or garrison environments. In the Expeditionary Phase, respondents assess the process maturity levels when they deploy or move forward to expeditionary locations.

The survey is web-based, ensuring maximum reach and convenience for participants. We will provide respondents with detailed instructions on how to complete the CMMAT survey, and confidentiality encourage honest and accurate responses.

E. BENEFITS OF RESEARCH

The results of this research will give the 409th, 411th, and 414th CSBs specific roadmaps and steps to take to enhance their performance in the various contracting processes (Garrett & Rendon, 2005). The CMMM provides key practice activities that coincide with the process areas (Garrett & Rendon, 2005). The descriptions of the maturity levels at which each brigade rates for each process area, in combination with the model's practice activities, prescribe concrete improvements to the organization's tactics, techniques, procedures, and policies.

The responses to the CMMM demonstrate whether each organization experiences a decline in maturity for each process area when its members move forward to conduct expeditionary operations. This information, if utilized properly, would lead to insight regarding specific areas for emphasis from leadership related to current expeditionary operations and in preparation for future such operations. If no decline is measured from garrison to expeditionary operations for a given organization, the model will still facilitate maturation in process areas and progress toward optimization.

If a brigade's CMMM results indicate differing maturity levels among the various process areas, the brigade will be able to synthesize that information into knowledge and wisdom, redirecting some amount of resources/time/energy/attention from the more mature process areas to the ones that need more attention. They will be able to adjust their training schedule to enhance their contracting organizations' capabilities in the less mature areas. If different divisions or teams are responsible for different process areas, the model and assessment results will foster knowledge transfer and sharing. The



organization may even cross-level personnel to balance out the talent among the process areas.

F. LIMITATIONS OF RESEARCH

The small size of the applicable population will limit our research. We will only be looking at the field of contracting. We will only be focusing on the Army and not on any of the other military branches. We will only be looking at the Army's operational contract support, or expeditionary contracting operations, and not at operations within the United States. We will only be surveying three of the Army's OCONUS CSBs. The fact that we researchers have no current affiliation with the brigades may discourage some eligible recipients from participating.

We will only be interested in responses from the current brigade members with sufficient contracting experience in these brigades, especially those with relevant expeditionary experience. We will be unable to poll recently departed members of these brigades who may have met these qualifications, thus further limiting our sample size. As Army OCONUS CSBs are much smaller than typical Army brigades (or even battalions), this will also result in a small target population. This population size will restrict any potential generalization of the data; we will not be able to extrapolate and make assumptions about Army Contracting Command (ACC) – Overseas Operations or larger cross-sections of the expeditionary DoD acquisition workforce in general.

Survey recipients will have to choose to respond to the survey voluntarily, and acquisition workforce members are typically quite busy with heavy workloads. The assumption is that the survey respondents will answer truthfully, but that may not happen. Some respondents may stop putting forth maximum effort while taking the survey and begin selecting options based on what they think will make their organization appear most optimal. Inherent in the CMMM is subjectivity of the respondents; their perceptions may not truly reflect the state of maturity in their organization's processes. The CMMM uses personal perspectives and opinions of workforce members that are not at the highest level of the organizations. It does not directly assess any formal documentation of policies, practices, and procedures within the brigades. As the day-to-day activities and interactions with the organization's systems and information repositories will vary among



the respondents, disconnect between what the respondents believe is true and what is official policy of the brigades and ACC above them is almost inevitable.

Another limiting factor will be the lack of triangulation of the data received from the responses. We will not have access to any other evidence of process maturity within the brigades. Army Federal Acquisition Regulation Supplement (AFARS) 5101.690(b) (2024) requires that Army contracting organizations undergo procurement management reviews every three years. The results of these reviews would undoubtedly aid in assessing process maturity levels, but we are not privy to any results of these reviews.

G. ORGANIZATION OF THE REPORT

This report is broken into five chapters. The intent of this organization method is to walk a reader new to the topic through an intuitive step-by-step explanation of the report and the problem it purports to research and solve.

Chapter I sets the tone for the report by introducing the background, purpose, and research questions the report intends to answer. It provides the research methodology as well as its benefits and limitations. Overall, Chapter I is the administrative framework of the report.

Chapter II is the literature review which expands upon the background provided in Chapter I. It begins with a description of auditability theory, which is the theoretical framework of this research. It next focuses the lens of this research by broadly exploring maturity models in various fields. Chapter II then narrows the focus down to the CMMM itself, outlining how it is broken down into key process areas and how it defines maturity levels. Finally, it provides a review of previous CMMM assessments across the DoD and identifies patterns that have emerged across these studies.

Chapter III provides an overview of the units that were studied, beginning with a broad look at Army contracting, then delving into the individual units that are the focus of this research. This provides the reader with key context regarding the 409th, 411th, and 414th CSBs, their missions, and how they fit into the knowledge gap identified in the literature review.



Chapter IV is the heart of this paper and provides data, analysis, and answers to the research questions. Here, the report provides the means for the selection of study participants, administration of data collection, and response rate. It then provides the CMMM results, both cumulative for the entire study and by individual Contracting Support Brigade. Results by brigade are broken down both by key process area and by process enabler to provide the most benefit. This chapter concludes with answering the study's research questions.

Chapter V is the summary; it provides a summary of the research, the conclusions of the research, and recommendations for further research based on the findings of this research.

H. SUMMARY

The purpose of this chapter was to provide the administrative framework of this paper. This chapter introduced our research into any expeditionary deficiencies in contract management organizations. We began with a discussion of the background issues that led us to our research area. We then explained the purpose of the research and listed the four key research questions we wish to answer. We next delineated our methodology for data collection and discussed both potential benefits of the research as well as acknowledgement of its limitations. This chapter concluded with the organization of this report, and the following chapter is a review of recent and relevant literature that will set the foundation for this research.





II. LITERATURE REVIEW

A. INTRODUCTION

The purpose of this chapter is to present a literature review that sets the foundation for this research. This chapter begins with an exploration of auditability theory, the theoretical foundation for this study, which establishes the necessity of competent personnel, effective internal controls, and capable processes for ensuring responsible use of taxpayer dollars. It then transitions to a discussion of maturity models, as the tools most used to measure process capability. Finally, the chapter delves into the CMMM, the model employed in this research, and delivers a review of recent and previous CMMM assessments that have been conducted throughout the DoD to provide the context and framework for this research. To begin building that framework, the next section introduces auditability theory which is the theoretical framework of this research.

B. AUDITABILITY THEORY

The goal of public procurement is to ensure that the acquisition of goods and services is conducted with the highest standards of transparency, integrity, and accountability. These principles are vital in maintaining public trust and ensuring that taxpayer funds are used effectively and responsibly. Achieving these goals requires a robust framework that not only enforces compliance with laws and regulations but also fosters a culture of ethical behavior and vigilant oversight. Auditability theory provides this framework and enables continuous monitoring and evaluation (J. M. Rendon, 2018). Through the lens of auditability theory, organizations can create systems that are auditable, ensuring that procurement activities are conducted openly and with integrity, thus safeguarding against fraud and misuse of resources.

The theory of auditability in public procurement incorporates three key elements: (a) competent personnel, (b) effective internal controls, and (c) capable processes (J. M. Rendon, 2018). This *auditability triangle* (see Figure 1) provides a conceptual framework for understanding what is needed for federal acquisition organizations to be auditable and therefore transparent, accountable, and resistant to fraud (J. M. Rendon, 2018).



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Conceptual Framework



Figure 1. The Auditability Triangle. Source: R. G. Rendon and J. M. Rendon (2015).

Competent personnel have "appropriate education, adequate training, and relevant experience" to accomplish their duty (J. M. Rendon, 2018, p. 590). For DoD procurement, standards for competent personnel are established by the Defense Acquisition Workforce Improvement Act, and personnel are given the appropriate education and training through a comprehensive system of training courses, graduatelevel education, professional certification, and experience assignments (Management Policies, 2024). Effective internal controls are the mechanisms that "ensure compliance with laws and regulations, monitoring procedures to assess enforcement, and reporting material weaknesses" (R. G. Rendon & J. M. Rendon, 2015, p. 716). Internal controls have been codified by both the Government Accountability Office in 1999 and by DoD policy in DoD Instruction 5010.40, and there now exist many checks and balances on federal procurement systems to ensure legality (R. G. Rendon & J.M. Rendon, 2015). The side of the auditability triangle that is not institutionalized across the DoD is capable processes, which is the focus of this research.

Capable processes refer to the procedures and systems in place within an organization that support efficient and effective procurement activities: "Process capability is measured in terms of processes that are fully established, institutionalized, mandated, integrated with other organizational processes, periodically measured, and continuously improved" (J. M. Rendon & R. G. Rendon, 2015, p. 10). There are many



methods used to measure process capability, and the study combines "statistical tools ... and control charts to interpret and analyze the data representing a process" (Wooluru et al., 2014, p. 399). Process capability measurements typically provide single number assessments that depict the ability of the process to meet specifications and therefore identify areas for improvement (Wooluru et al., 2014, p. 399). One tool commonly used to measure process capability is the maturity model.

C. MATURITY MODELS

The maturity model as a method to measure and ensure the capability of processes dates to 1991 in the software industry. The Software Engineering Institute's Capability Maturity Model resulted from efforts that began in 1986 with contributions from the Mitre Corporation (Paulk et al., 1993). Many software firms at that time were experiencing cost and schedule overruns and needed a new method to manage projects and processes, Paulk and his fellow authors (1993) pointed out. This new model introduced practices to be encouraged in different areas of essential processes that should lead to improved capabilities. Industry assessments and feedback from the field and the government informed the model (Paulk et al., 1993). The Capability Maturity Model also distinguished between mature and immature organizations, processes, and capabilities. Key words and phrases that made up the concept of immaturity included "processes are generally improvised," processes are "not rigorously followed or enforced," processes are "reactionary," "schedules and budgets are routinely exceeded," "functionality and quality are often compromised," and "reviews and testing are often curtailed or eliminated" (Paulk et al., 1993, p. 19).

Conversely, Paulk et al. (1993) highlighted that the model's explanation of maturity focused on a firm being able to successfully manage maintenance and development of its product. They described that mandatory processes are realistic from a usability perspective, and managers update and improve processes as often as necessary. Leaders also make efforts toward evaluating the quality of both processes and the resulting products (Paulk et al., 1993). Maturity, according to the model and Paulk et al. (1993), could exist as one of five levels: initial, repeatable, defined, managed, or optimizing. The model provided a description of how to move from one maturity level to



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL the next, thus improving the organization's processes and ability to deliver quality results more consistently.

The maturity model framework spread into general business and specific acquisition-related fields as well. Harold Kerzner, PhD (2001) published the Project Management Maturity Model (PMMM), creating a structure like the earlier Capability Maturity Model born out of the software industry but with revised labels for its five levels of maturity. In the PMMM, Level 1 is Common Language; Level 2 is Common Processes; Level 3 is Singular Methodology; Level 4 is Benchmarking; and the highest level, Level 5, is Continuous Improvement (Kerzner, 2001). Within Level 1, Kerzner (2001) posited that the organization acknowledges the significance of project management and the pertinence of comprehending its foundational knowledge, terminology, and language. Level 2 means the organization now defines common processes so that they may be consistently repeatable, and the organization begins to support and apply principles of project management to other functions within the concern (Kerzner, 2001).

With Level 3, the firm unifies all methodologies synergistically, centering on project management, Kerzner (2001) stated. Level 4 brings an eye toward benchmarking and improvement to stay ahead of competitors (Kerzner, 2001). Level 5 indicates the organization has achieved continuous improvement by constantly analyzing and acting on information it obtains through the benchmarking of Level 4, Kerzner (2001) stated. This model also includes risks tied to culture change at each level, what an organization needs to do to move up to the next level of maturity, and potential obstacles to upward evolution (Kerzner, 2001).

Earned value management (EVM) is another acquisition-related field that has utilized a maturity model. The EVM Maturity Model (EVM³), developed by Ray Stratton (2006), again incorporates five levels of maturity. Level 1 in this model is Initial Level, Level 2 is Localized/Partial Implementation, Level 3 is American National Standards Institute/Electronic Industries Alliance (ANSI/EIA) 748-Compliant Implementation, Level 4 is Managed Implementation, and Level 5 is Optimizing Implementation (Stratton, 2006). In a Level 1 organization, EVM existence is little to none; with Level 2,



the firm has implemented an effective but low-cost EVM system, only applying it at certain levels or to certain functional areas or teams (Stratton, 2006). Attaining Level 3 maturity indicates that the organization is fully complying with all 32 ANSI/EIA EVM guidelines and thus obtaining increasingly useful information, according to Stratton (2006). An organization deeply committed to EVM and measuring/assessing its system, and its quality, has reached Level 4 maturity; Level 5 occurs when the organization makes an ongoing project out of its improvement of the EVM system (Stratton, 2006). The EVM³ also delineates key process areas with goals necessary to attain each level of maturity (Stratton, 2006). Following this discussion of various maturity models, we will focus our attention on the CMMM itself.

D. CONTRACT MANAGEMENT MATURITY MODEL

The CMMM (Garrett & Rendon, 2005) applies the concepts of the maturity model and five levels of maturity to the key processes involved in and distinct areas of the management of contracts. In 2003, Dr. Rene G. Rendon developed and implemented the CMMM and the CMMAT to evaluate and enhance the capability of organizational contract management processes (Garrett & Rendon, 2005). The CMMM offers a visual tool designed to assist public procurement organizations in evaluating the critical steps required for procuring supplies, services, or integrated solutions (R. G. Rendon, 2008). It includes five maturity levels applied to six key process areas and associated practices in the contract management process (R. G. Rendon, 2008).

1. Key Process Areas and Practice Activities

Garrett and Rendon (2005) emphasized that "in order for the organization to have an accurate and detailed assessment of its process capability, the model reflects the sixcontract management key process areas as well as key practice activities within each process area" (p. 51). The following sections introduce six key process areas.

a. Procurement Planning

Procurement planning is the process of determining which organizational needs can be best fulfilled by purchasing products or services from outside sources (R. G. Rendon, 2009). It includes deciding whether to procure, the method of procurement, what



items or services are needed, the quantity, and the timing (R. G. Rendon, 2009). According to R. G. Rendon (2009) "Procurement planning activities include conducting stakeholder analysis, conducting outsourcing analysis, determining requirements and developing related documents, conducting market research, selectin the procurement method, and selecting the contract and incentive type" (p. 301).

The CMMM lists key practice activities related to each key process area. Key practice activities related to procurement planning processes and standards include "effectively determining the scope of work or description of the product;" conducting effective market research; and considering "other program team areas such as funds availability, preliminary cost and schedule estimates" and "quality management plans" (Garrett & Rendon, 2005, p. 52). They also include providing "an integrated assessment of contract type selection, risk management, and contract terms and conditions;" describing the requirement in the statement of work adequately and with sufficient detail; and documenting the acquisition plan (Garrett & Rendon, 2005, p. 52).

b. Solicitation Planning

Solicitation planning is the process of creating the necessary documents to facilitate the solicitation (R. G. Rendon, 2009). It involves outlining the program requirements and identifying possible suppliers (R. G. Rendon, 2009): "Solicitation planning activities include developing solicitation document such as Request for Proposals or Invitation for Bids, developing contract terms and conditions, and developing proposal evaluation criteria" (R. G. Rendon, 2009, p. 301).

The key practice activities related to solicitation planning include using "standard procurement forms and documents," incorporating "automated and paperless processes as much as possible" with all stakeholders, and obtaining "adequate resources to conduct solicitation planning" (Garrett & Rendon, 2005, p. 53). They also include structuring solicitations "to facilitate accurate and complete responses" and to be "rigorous enough to ensure consistent, comparable responses but flexible enough to allow consideration of contractor suggestions for better ways to satisfy the requirements" (Garrett & Rendon, 2005, p. 53). Key practice activities here also include ensuring solicitations "include



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL appropriate evaluation criteria consistent with the acquisition strategy" and allowing "for amendments to solicitation documents" when necessary (Garrett & Rendon, 2005, p. 53).

c. Solicitation

Solicitation is the process of gathering information (bids or proposals) from potential suppliers on how they can fulfill the project's requirements (R. G. Rendon, 2009). "Solicitation activities include advertising procurement opportunities, conducting industry and pre-proposal conferences, and amending solicitation documents as required" (R. G. Rendon, 2009, p. 301). Key practice activities related to the solicitation process area include maintaining "a qualified bidders list providing information on prospective sellers" and conducting "market research and advertising to identify new sources" (Garrett & Rendon, 2005, p. 53). These activities also include the utilization of presolicitation or pre-bid conferences "to ensure all prospective contractors have a clear common understanding" of the requirements, as well as soliciting "inputs from industry to be used in developing solicitations" (Garrett & Rendon, 2005, p. 53). One final key process activity in this area would be using "a paperless process to the greatest extent possible in issuing solicitations and receiving proposals" (Garrett & Rendon, 2005, p. 53).

d. Source Selection

According to R. G. Rendon (2009), "The process of receiving bids or proposals and applying evaluation criteria to select a provider" (p. 302). Activities involved in source selection include proposal evaluation, comparing cost against the organization's independent cost estimate, determining price reasonableness, considering a contractor's past performance, negotiating, and selecting a contractor (Garrett & Rendon, 2005). The key practice activities related to source selection include using appropriate evaluation criteria and standards; focusing on "management criteria, technical criteria, and price criteria" in proposal evaluation; and tailoring evaluation criteria along the best-value continuum to "meet the objectives of the procurement plan" (Garrett & Rendon, 2005, p. 53). They also include comparing price proposals against the independent government estimate, determining the reasonableness of proposed prices via realism and



competitiveness, and considering offerors' past performance records when conducting evaluations (Garrett & Rendon, 2005, p. 53). Key practice activities in this area also include using "a team approach to conducting negotiations with potential contractors;" conducting pre-award surveys when necessary to confirm offerors' capabilities in the financial, managerial, and technical areas; and debriefing successful and unsuccessful offerors (Garrett & Rendon, 2005, pp. 53–54).

e. Contract Administration

Contract administration is the process of ensuring that both parties comply with the terms of the contract (R. G. Rendon, 2009). "Contract administration activities include conducting a post-award conference, monitoring the contractor's performance, and managing contract changes" (R. G. Rendon, 2009, p. 302). Key practice activities related to contract administration include establishing a method "for assigning contracts to individuals or teams for managing the post-award phase of the contract," conducting pre-performance meetings "to discuss buyer and seller contract administration responsibilities," and using "a team approach for monitoring ... performance to ensure the fulfillment of . . . obligations by all parties" (Garrett & Rendon, 2005, p. 54). They also include having established processes for: "managing and controlling contract changes to . . . requirements; . . . ensuring that only authorized individuals negotiate or agree to contract changes; . . . managing invoices and payments; . . . administering contract incentive-fee and award-fee provisions; ... conducting periodic and integrated cost, schedule, and performance evaluations, such as earned value management;" and "maintaining a conformed copy of the contract . . . to document all changes" (Garrett & Rendon, 2005, p. 54). One final key process activity in this area is "encouraging contract disputes to be resolved using alternate disputes resolution methods" (Garrett & Rendon, 2005, p. 54).

f. Contract Closeout and Termination

Contract closeout and termination is "the process of verifying that all administrative matters are concluded on a contract that is otherwise physically complete" (Garrett & Rendon, 2005, p. 52). Contract closeout activities include confirming



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL completing of work, proper documentation, acquiring the contractor's release of claims, ensuring final payment from the buyer, establishing process for discontinuing performance completely and maintaining lessons-learned and best practices (Garrett & Rendon, 2005). The key practice activities related to contract closeout include the organization having established processes for: "closing out contracts, ensuring completion of work, complete documentation, and financial resolution of issues; . . . exercising a party's contractual right to discontinue performance completely or partially;" and "exercising a mutual agreement of the parties to discontinue performance completely or partially" (Garrett & Rendon, 2005, p. 54). They also include utilizing "checklists, templates, and forms for ensuring proper documentation of closed-out contracts," as well as ensuring the process "requires obtaining the seller's release of claims as well as verifying final payment from the buyer" (Garrett & Rendon, 2005, p. 54). Finally, "the contract termination process requires a written or oral notification to terminate a contract" and "the organization maintains a lessons-learned and best practices database for use in future projects and contracts" (Garrett & Rendon, 2005, p. 54).

The current approach to contract management involves several best practices for executing the key process activities (R. G. Rendon, 2009). The way an organization handles these key process areas and the degree to which it integrates best practices into its key activities will define its level of contract management process maturity (R. G. Rendon, 2009). The CMMM is structured into five maturity levels, which are explained in the following section (R. G. Rendon, 2009).

2. Maturity Levels

The CMMM is composed of five levels of maturity. The five levels of maturity range from Level 1, Ad Hoc; to Level 2, Basic; to Level 3, Structured; to Level 4, Integrated; and finally, to Level 5, Optimized (Garrett & Rendon, 2005). The following subsections provide discussions of each level of maturity, from Level 1 to Level 5.

a. Level 1–Ad-Hoc

According to Garrett & Rendon (2005), "the organization at this initial level of process maturity acknowledges that contract management processes exist; that these



processes are accepted and practiced throughout various industries and within the public and private sectors" (p. 50). Management appreciates the benefits of contract management, but there is not a standardized process in place across the entire organization (R. G. Rendon, 2009). Instead, a few processes exist but are applied irregularly and inconsistently (R. G. Rendon, 2009). Some contracts may follow these processes, while others do not, with no clear pattern (R. G. Rendon, 2009). There is also informal documentation, but it is used sporadically. Moreover, neither the managers nor the contract staff are held accountable for sticking to any established processes or standards (R. G. Rendon, 2009).

b. Level 2–Basic

Garrett & Rendon (2005) established that at the basic maturity level, organizations "have established some basic contract management processes and standards within the organization, but these processes are required only on selected complex, critical, or high-visibility contracts—such as contracts meeting certain dollar thresholds or contracts with certain customers" (p. 50). At this level, organization does not emphasize or require the use of the established basic contract management process and standards in its policy (Garrett & Rendon, 2005).

c. Level 3–Structured

Per Garrett & Rendon (2005), at the structured level of maturity "contract management processes and standards are fully established, institutionalized, and mandated throughout the entire organization" (p. 50). Official documentation has been established to detail contract management processes, standard contracting procedures, and certain workflows may even be automated (Garrett & Rendon, 2005). "Furthermore, since these contract management processes are mandated, the organization allows the tailoring of processes and documents, allowing consideration for the unique aspects of each contract, such as contracting strategy, contract type, terms and conditions, dollar value, and type of requirement" (Garrett & Rendon, 2005, p. 51).


d. Level 4–Integrated

Garrett & Rendon (2005) established that at the integrated level of maturity, organizations "have contract management processes that are fully integrated with other organizational core processes, such as financial management, schedule management, performance management, and systems engineering" (p. 50). Along with representatives from other departments, the end-user customer of the contract is a key part of the team responsible for buying or selling contracts (R. G. Rendon, 2009). Additionally, the organization's management occasionally measures different parts of the contract management process and applies them when making contract-related decisions (R. G. Rendon, 2009).

e. Level 5–Optimized

According to Garrett and Rendon (2005), "the fifth and highest level of maturity reflects an organization whose management systematically uses performance metrics to measure the quality and evaluate the efficiency and effectiveness of the contract management processes" (p. 51). At this level, organizations keep refining their contract management processes to make them more efficient and effective (Garrett & Rendon, 2005). Garrett and Rendon (2005) also emphasized that "the organization has established lessons learned and best practices programs to improve contract management processes, standards, and documentation" (p. 51). Additionally, efforts to streamline contract management processes are part of the organization's ongoing program for continuous improvement (Garrett & Rendon, 2005). CMMM assessments have been conducted on organizations across the DoD, the next section provides an overview of some of the most recent applications.

E. RECENT APPLICATIONS OF CMMM

The CMMM has been applied in the study of several Army contracting units, including the 918th Contracting Battalion and 410th CSB (Valentine & Croston, 2015), Aberdeen Proving Ground (Gary & Petree, 2014), U.S. Army Joint Munitions and Lethality Contracting Center (Puma & Scherr, 2009), and U.S. ACC National Capital Region Contracting Center (Jeffers, 2009). The model has also been applied to other



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL organizations, including the Navy (R. G. Rendon, 2015), the Air Force Life Cycle Management Center and Space and Missile Systems Center (Chang et al., 2012), and the Air Force's 314th Contracting Squadron (Jackson, 2007), among others. The finding of every one of these studies was that federal contracting organizations tend to score highest on the CMMM in Source Selection and the poorest in Contract Closeout. Significantly, when data are sorted by process enablers another pattern emerges, showing that management support peaks at source selection and drops precipitously after contract award (R. G. Rendon, 2015). These studies show that process maturity and management support are closely related and that as management support decreases post contract award the process capability of contract administration and contract closeout suffer in turn.

No CMMM study has focused on OCONUS organizations or contracting in an expeditionary environment. Furthermore, no studies utilizing the CMMM have sought to investigate how controlled variables, such as environmental or operational factors, might affect the maturity of contract management processes. Additionally, there has been no follow-up study of any unit previously assessed using the CMMM to determine whether any changes or improvements in process maturity have occurred over time. The next chapter introduces the 409th, 411th, and 414th Contracting Support Brigades, which are U.S. Army contracting organizations permanently stationed outside of the United States and are the units that this research will focus on.

F. SUMMARY

The purpose of this chapter was to provide our literature review. In this chapter, we began our literature review with a discussion of auditability theory and how it applies to government operations, particularly acquisition. Auditability ensures the government is making effective use of the public's taxes, protecting their interests, and maintaining integrity in its fiduciary responsibilities. We next drilled down into a key auditability and effectiveness tool, the process maturity model. We discussed the emergence of maturity models in several fields, from the software industry into business and acquisition fields. We concluded the chapter by introducing the crux of this thesis, the CMMM and providing an overview of recent CMMM applications across the DoD. In the next chapter, we will discuss the units on which we focus the CMMM and its CMMAT as we



strive to fill a knowledge gap. No one has applied the CMMM to any Army OCONUS CSBs, let alone looked for any differences in garrison and expeditionary contracting processes' maturity in those locations.



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III. OCONUS CONTRACTING SUPPORT BRIGADES

A. INTRODUCTION

The purpose of this chapter is to introduce the units serving as the object of our research. The chapter is broken down into one section for each unit: the 409th, 411th, and 414th CSBs, which are three of the U.S. Army's premier OCONUS contracting units. They operate in environments that are often more challenging than those in the United States, navigating language barriers, different tax rules and laws, and unique relations with and customary practices of local vendors. These CSBs face additional layers of complexity when they send contracting officers and contract specialists forward into countries other than where their headquarters call home (and in the case of the 414th CSB, a different continent). Though these forward-deployed personnel may not be operating in an active combat zone, the expeditionary nature of their work makes us want to know more about their processes at their home stations and abroad. The following sections introducing the three OCONUS CSBs begin with a discussion of the 409th CSB.

B. 409TH CONTRACTING SUPPORT BRIGADE

The 409th CSB's headquarters is in Sembach, Germany. Organic to the brigade are the Theater Contracting Center in Kaiserslautern, the 928th Contracting Battalion and Regional Contracting Office (RCO) Bavaria in Grafenwoehr, RCOs in Wiesbaden and Stuttgart, and RCO Benelux in Brussels, Belgium. The 409th CSB also oversees Regional Contracting Center – South, with operational control of rotating units from the United States supporting Ukraine's efforts against Russia (Z. Feterl, email to authors, October 9, 2024).

The 409th CSB's mission is to provide

enhanced readiness and operational capacity for U.S. and Partner Forces in the European Theater by delivering the power of Army contracting to increase commercial capability and business advice to support Sustaining, Shaping, and Decisive operations in order to maintain a strong Europe. (Z. Feterl, email to authors, October 9, 2024)



They support the U.S. European Command in its missions and efforts. The 409th Fiscal Year (FY) 2023 organizational chart appears in Figure 2.



Figure 2. 409th CSB FY2023 Organizational Chart. Source: Z. Feterl (email to authors, 2024).

In FY2023, the 409th CSB obligated more than \$1 billion via over 9,400 contract actions (Z. Feterl, email to authors, October 9, 2024). More than three quarters of this obligated money was in support of Army Materiel Command's Installation Management Command (IMCOM), with the second-most supported customer (in terms of money obligated) being U.S. Army Europe and Africa (Z. Feterl, email to authors, October 9, 2024). The 409th CSB also administered theater contracts valued at approximately \$4.3 billion (Z. Feterl, email to authors, October 9, 2024). These figures demonstrate just how crucial the 409th CSB's mission is in enabling the Army's operations in Europe.

In addition to supporting large operations such as Operation Enduring Welcome and the European Assure, Deter, and Reinforce mission, another aspect of the 409th CSB's mission is to support large training exercises in Eastern Europe such as DEFENDER-Europe 23 (Z. Feterl, email to authors, October 9, 2024). Exercises like this test various facets of military operations, such as drawing and utilizing Army prepositioned stock items, establishing key logistical nodes like seaports of debarkation, and facilitating reception, staging, and onward movement of incoming forces, all of



which are essential in emerging overseas operations (Z. Feterl, email to authors, October 9, 2024).

In the vein of assessing performance levels, the 409th CSB conducted a brigade external evaluation during FY2023 (Z. Feterl, email to authors, October 9, 2024). Evaluators compared results of realistic training scenarios to standards for training proficiency to assess the unit's ongoing readiness to conduct its operations. ACC's deputy commanding general for overseas operations was among those who commended the 409th's performance during the evaluation (Z. Feterl, email to authors, October 9, 2024). 2024). Moving from Germany to South Korea, we next discuss the second CSB on which we focus our research, the 411th CSB.

C. 411TH CONTRACTING SUPPORT BRIGADE

The 411th CSB is another of the ACC's forward-deployed (expeditionary) CSBs. The 411th CSB's mission is to "plan and execute effective and agile Contracting Support across the full spectrum of military operations enabling maximum flexibility to the joint warfighting customer in the Korea Theater of Operations and during expeditionary operations throughout the Pacific theater" (Brigade S3, email to authors, February 12, 2024). Its headquarters is located at U.S. Army Garrison Humphreys, and other offices are located at Osan Air Base, Kunsan Air Base, Camp Henry, and Camp Casey in the Republic of Korea (Brigade S3, email to authors, February 12, 2024). The 411th CSB's organizational chart appears in Figure 3.



411th CSB Organizational Structure



Figure 3. 411th CSB FY2023 Organizational Chart. Source: Brigade S3 (email to authors, 2024).

According to fiscal year 2023 reports, "The 411th CSB obligated \$580,630,848 in contract support with 8,103 contract actions during FY23" (Brigade S3, email to authors, February 12, 2024). Their largest customer is IMCOM, accounting for 26% of the workload and 41.62% by dollars obligated (Brigade S3, email to authors, February 12, 2024). The 411th CSB's next largest customer is the U.S. Air Force, accounting for 8.23% of the workload and 18.24% of dollars obligated (Brigade S3, email to authors, February 12, 2024). "As the lead service for contracting on the Korean Peninsula, the 411th CSB supported the United States Forces Korea (USFK), each of the Service Components, Special Operations Command Korea as well as any other DoD elements requiring contracting support in Korea" (Brigade S3, email to authors, February 12, 2024).

The 411th CSB has a unique program called the Invited Contractor Program (ICP). The ICP facilitates theater business clearance for U.S. contractors operating in Korea to support USFK (Brigade S3, email to authors, February 12, 2024). To maintain uninterrupted logistical and operational support, "The ICP provides SOFA designation and clearance for hundreds of U.S. contracts and thousands of U.S. contractors per year,



ensuring continuity of critical contracted services for the warfighter" (Brigade S3, email to authors, February 12, 2024).

Due to extensive contracting support requirements but little to no experience and not competent Requiring Activity (RA) or Contracting Officer Representatives (CORs), the 411th CSB implemented the 411th CSB Logistics University to teach unit S-4 planners, Property Book Officers, unit supply staff, and command teams about the benefits and challenges of contracting on the battlefield and enhance the contracting process (Brigade S3, email to authors, February 12, 2024). In addition to the 411th CSB Logistics University, the 411th CSB also provides one-on-one desk-side instruction, especially for contract specialists and CORs for RA customers and contractors for awarded contracts to improve the contracting process (Brigade S3, email to authors, February 12, 2024).

Furthermore, the 411th CSB also provides contracting support for U.S. Indo-Pacific Command exercises throughout the Indo-Pacific area of responsibility; this includes Operation Khaan Quest, Mongolia; Operation Bersama Warrior, Malaysia; and Operation Tiger Lightning, Bangladesh (Brigade S3, email to authors, February 12, 2024). Moving from Korea to Italy, we next discuss the 414th CSB.

D. 414TH CONTRACTING SUPPORT BRIGADE

The 414th CSB is headquartered in Vicenza, Italy, overseeing contracting operations that support missions in Italy via their RCO there, along with a sub-RCO for the Darby Military Community in Livorno (executive officer, email to authors, September 11, 2024). Their expeditionary operations support numerous locations, including cooperative security locations and contingency locations, in Africa. The 414th CSB's mission is to deliver "Army contracting solutions to enable VICTORY for ... supported units -- all the time and everywhere!" (executive officer, email to authors, September 11, 2024). Their vision is to be "the premiere office for providing contracting solutions and options to ... supported units in Southern Europe and Africa" (executive officer, email to authors, September 11, 2024). The 414th CSB's organizational chart is depicted in Figure 4. A recent change to the chart was the merger of RCO-Italy and RCO-Africa.



414th CSB FY23 ORGANIZATIONAL CHART



Figure 4. 414th CSB Organizational Chart. Source: Executive Officer (email to authors, 2024).

The 414th CSB identifies as the "premier provider of commercial sustainment and logistics readiness in the Southern Europe and African theaters" (Executive Officer, email to authors, September 11, 2024). In addition to fulfilling their mission statement, they primarily "plan, synchronize, execute, and administer effective contracting solutions" for supported servicemembers (executive officer, email to authors, September 11, 2024). They embed their Contracting Support Operations section with the U.S. Army Southern European Task Force, Africa, sending representatives to key staff meetings to provide critical operational contract support advice (executive officer, email to authors, September 11, 2024).

In addition to key customer engagements such as this and traveling to the United States to train field ordering officer teams before their deployments to Africa, the 414th CSB's RCO-Africa personnel supported numerous training exercises last year. They supported African Lion 23, which took place in Tunisia, Morocco, and Ghana; Justified Accord 23, based in Nairobi, Kenya; African Endeavor 23, out of Dar Es Salaam, Tanzania; African Land Forces Summit 23, in Abidjan, Cote D'Ivoire; African Senior Enlisted Leaders Conference 23, in Lusaka, Zambia; Security Implications of Climate



Change 23, which took place in Gaborone, Botswana; and African Chiefs of Defense Conference 23, which occurred in Rome (executive officer, email to authors, September 11, 2024). In addition to providing RCO-Africa's expeditionary support, the 414th CSB also awarded 458 contract actions valued at \$30 million by RCO-Italy, including a key architect and engineering multiple-award task order contract valued at \$20 million, and administered many others (executive officer, email to authors, September 11, 2024).

The 414th CSB also oversees a robust governmentwide commercial purchase card (GPC) program. In FY2023, 114 GPC holders executed transactions valued at \$6.7 million (executive officer, email to authors, September 11, 2024). These simplified acquisition micro-purchases made by servicemembers on the ground, usually not members of the official acquisition workforce, served as force-multiplying engagements, freeing up 414th CSB contracting officers and contract specialists to spend more time and energy on larger acquisitions.

E. SUMMARY

In this chapter, we highlighted the unique missions and demands of the 409th, 411th, and 414th CSBs. This discussion provided a background necessary to fully contemplate the results of this research and understand the complexity of expeditionary operations. In the following chapter, we discuss the responses to the CMMAT, our analysis of the data, and the answers to our research questions.



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IV. ASSESSMENT

A. INTRODUCTION

This purpose of this chapter is to provide the results of the research. The chapter begins with the results themselves presented as a compilation of all respondents and by each CSB individually. Data are presented both by key process area (procurement planning, solicitation planning, solicitation, source selection, contract administration, and contract closeout) and by process enabler (process strength, successful results, management support, process integration, and process measurement).

B. ADMINISTRATION OF THE CMMAT

The CMMAT was deployed on September 10, 2024, and kept open for 31 days. After being filtered by the demographic questions, all remaining respondents were asked the 62 questions of the CMMAT. Completion time is estimated to have averaged approximately 16 minutes. Once the CMMAT was deployed, respondents were selected based on some eligibility criteria.

C. SELECTION OF STUDY PARTICIPANTS

The CMMAT was electronically distributed to representatives from the 409th, 411th, and 414th CSBs, who then distributed it to their entire brigade. The survey began with demographics questions that were then used to filter out ineligible participants. The survey automatically ended for anyone who was not a Back-to-Basics (BtB) certified contracting professional, who was not assigned to one of the three CSBs, or who was in a primarily leadership position within their unit. This was done primarily to ensure the reliability of survey responses. Respondents who are not BtB certified contracting professionals do not have the appropriate expertise to rate their units, so they were not included. Personnel serving primarily as leadership were not included because their responsibilities typically separate them from the actual practice of contract management. This research sought to measure practice, not policy, so leadership was also removed from the pool of respondents. These discriminators are in alignment with all previous



studies conducted with the CMMM. The next section will cover the response rate that this survey generated.

D. RESPONSE RATE

The survey was deployed to a total of 313 personnel, 52 of whom initiated the survey. However, 38 of these respondents were not qualified participants, as the personnel receiving the survey included non-qualified personnel. 14 qualified respondents completed the survey, resulting in a total response rate of 4%. The organizations did not provide total numbers of qualified personnel.

Of the 218 recipients of the survey at the 409th CSB, 19 responded. However, eight of these respondents were not certified and 10 were in leadership positions, leaving only four respondents who provided data to the CMMAT and resulting in an effective response rate of 2%.

Of the 95 recipients of the survey at the 411th CSB, 33 responded. However, after the demographic questions filtered out those who were not certified and those in leadership positions, only 10 remained to respond to the CMMAT, leaving a response rate of 11%.

The 414th CSB was not responsive in terms of the number of qualified respondents.

The demographics of the respondents are shown in Table 1. The next section will cover the findings of the assessment.

CSB	Total Personnel	Qualified	Experience		
			Contracting Years	Time in CSB	
409th CSB	218	4 (2%)	>10 Years — 1 1-3 Years — 3	6-12 Months – 4	
411th CSB	95	10 (11%)	3-6 Years – 5 1-3 Years – 3 <1 Year – 2	>24 Months – 1 12-24 Months – 4 6-12 Months – 3 <6 Months – 2	

 Table 1.
 CMMM Respondent Demographics



E. CMMM FINDINGS

This section provides the results of the CMMM assessment and is organized by CSB. First the data are presented showing the mean, standard deviation (SD), and number of responses (N) for each question, along with the total score for each key process area (Tables 2 and 3). This is followed by a depiction of how each of those numerical scores translates into a maturity level (Figure 5). Next, a summative chart is presented, showing the mean survey results by key process areas for each CSB (Figures 6 and 7).



Table 2.409th CSB CMMM Results

Key I	Process Area/Item	Mean	SD	N
Proc	urement Planning			
1.1	Process Strength	4.50	0.58	4
1.2	Process Strength	2.75	1.89	4
1.3	Process Strength	2.75	0.96	4
1.4	Management Support	4.25	0.50	4
1.6	Process Integration	2.75	2.22	4
1.7	Process Integration	3.50	1.29	4
1.8	Process Integration	2.75	2.22	4
1.9	Process Measurement	3.50	1.29	4
Total	Process weasurement	34.25	0.90	4
Soli	citation Planning	•		
2.1	Process Strength	3.67	0.58	4
2.2	Process Strength	4.00	0.00	4
2.3	Process Strength	2.67	1.53	4
2.4	Management Support	3.67	0.58	4
2.6	Process Integration	4.33	0.58	4
2.7	Process Integration	3.00	0.82	4
2.8	Process Integration	3.00	0.82	4
2.9	Process Measurement	2.25	1.71	4
2.10	Process Measurement	3.25	0.50	4
Total	Solicitation	33.50		
3.1	Process Strength	3.00	2.00	4
3.2	Process Strength	1.75	2.06	4
3.3	Process Strength	1.25	1.89	4
3.4	Process Results	2.50	1.73	4
3.5	Management Support	3.00	2.16	4
3.6	Process Integration	2.25	1./1	4
3.8	Process Integration	2.25	1.71	4
3.9	Process Measurement	2.50	1.91	4
3.10	Process Measurement	2.50	1.73	4
Total		22.75		
50 	Process Strength	2 75	0.50	4
4.1	Process Strength	3.00	1.41	4
4.3	Process Strength	3.25	0.96	4
4.4	Process Results	3.50	0.58	4
4.5	Management Support	4.00	0.82	4
4.6	Process Results	3.00	2.00	4
4.7	Process Results	3.25	0.96	4
4.9	Process Integration	2.75	1.89	4
4.10	Process Measurement	2.50	1.73	4
4.11	Process Measurement	3.25	0.50	4
Total		35.00		
Contr	act Administration	4.00	0.00	4
5.1	Process Strength	4.00	2.00	4
5.3	Process Strength	2.25	2.00	4
5.4	Process Results	3.00	2.00	4
5.5	Management Support	3.00	2.00	4
5.6	Process Integration	2.75	1.89	4
5.7	Process Integration	2.75	1.89	4
5.0	Process Integration	3.00	2.00	4
5.10	Process Measurement	2.75	1.89	4
5.11	Process Measurement	3.25	0.50	4
Total		33.00		
Co	ntract Closeout	2		
6.1	Process Strength	2.75	1.89	4
6.3	Process Strength	1.50	2.06	4
6.4	Process Results	2.00	2.31	4
6.5	Management Support	1.75	2.06	4
6.6	Process Integration	1.75	2.06	4
6.7	Process Integration	1.75	2.06	4
6.8	Process Measurement	1.50	1.91	4
6.10	Process Measurement	1.75	2.06	4
Total		18.25		



Key I	Process Area/Item	Mean	SD	N
Proc	urement Planning			
1.1	Process Strength	4.10	1.52	10
1.2	Process Strength	3.20	2.10	10
1.3	Process Strength	3.20	2.04	10
1.4	Process Results	3.70	1.//	10
1.5	Process Integration	3.80	1.51	10
1.0	Process Integration	4.10	1.52	10
1.8	Process Integration	3.90	1.85	10
1.9	Process Measurement	3.70	1.83	10
1.10	Process Measurement	3.70	1.83	10
Total		37.20		
Soli	citation Planning	4.00	1.00	10
2.1	Process Strength	4.00	2.01	10
2.2	Process Strength	3.30	1.62	10
2.4	Process Results	3.78	1.72	10
2.5	Management Support	3.63	2.00	10
2.6	Process Integration	3.89	1.76	10
2.7	Process Integration	4.00	1.66	10
2.8	Process Integration	4.00	1.58	10
2.9	Process Measurement	3.44	1.94	10
2.10	Process Measurement	3.44	1.94	10
Total		37.63		
21	Solicitation	2 5 6	1 00	10
3.1	Process Strength	3.50	1.00	10
3.2	Process Strength	3.44	1.94	10
3.4	Process Results	3.67	1.87	10
3.5	Management Support	3.67	1.94	10
3.6	Process Integration	3.67	1.87	10
3.7	Process Integration	3.56	1.88	10
3.8	Process Integration	3.22	1.86	10
3.9	Process Measurement	3.44	1.94	10
3.10	Process Measurement	3.44	1.94	10
Total		35.11		
4.1	Process Strength	4 71	0.49	10
4.1	Process Strength	4.71	1 53	10
4.3	Process Strength	4.00	1.53	10
4.4	Process Results	4.57	0.53	10
4.5	Management Support	4.43	0.79	10
4.6	Process Results	4.29	1.50	10
4.7	Process Results	4.43	0.79	10
4.8	Process Integration	3.71	1.60	10
4.9	Process Integration	4.00	1.41	10
4.10	Process Measurement	3.86	1.68	10
4.11 Total	Process Measurement	4.00	1.73	10
Contr	act Administration	40.00		
5.1	Process Strength	4.00	1.26	10
5.2	Process Strength	3.50	1.64	10
5.3	Process Strength	3.50	1.76	10
5.4	Process Results	3.50	1.38	10
5.5	Management Support	3.50	1.38	10
5.6	Process Integration	3.67	1.37	10
5.7	Process Integration	3.67	1.37	10
5.8	Process Integration	3.00	2.00	10
5.9	Process Integration	3.17	2.14	10
5.10	Process Measurement	3.50	1.64	10
Total	FIOLESS WIEdSUTEMENT	38,33	1.80	10
Co	ntract Closeout			
6.1	Process Strength	2.80	1.92	10
6.2	Process Strength	2.40	2.07	10
6.3	Process Strength	2.60	2.30	10
6.4	Process Results	4.00	1.41	10
6.5	Management Support	2.80	1.92	10
6.6	Process Integration	2.80	1.92	10
6.7	Process Integration	2.80	1.92	10
6.8	Process Measurement	2.80	1.92	10
6.9	Process Measurement	2.40	2.07	10
0.10	i i ocess iviedsurement	28,00	1.02	10
Total		/~~		

Table 3. 411th CSB CMMM Results



CONTRACT MANAGEMENT MATURITY MODEL						
MATURITY LEVEL	PROCUREMENT PLANNING	SOLICITATION PLANNING	SOLICITATION	SOURCE SELECTION	CONTRACT ADMIN.	CONTRACT CLOSEOUT
5 OPTIMIZED						
4 INTEGRATED						
3 STRUCTURED	411 th CSB	411 th CSB		411 th CSB		
2 BASIC	409 th CSB	409 th CSB	411 th CSB	409 th CSB	411 th CSB 409 th CSB	411 th CSB
1 AD HOC			409 th CSB			409 th CSB

Figure 5. CMMM Process Maturity Ratings Summary



Figure 6. 409th CSB Summary Ratings







F. DISCUSSION OF THE CMMM FINDINGS

By their CMMM assessment, and as seen in Figure 5, the 409th CSBs process maturity is rated as 'Basic' for the procurement planning, solicitation planning, source selection, and contract administration phases. They are rated as 'Ad Hoc' in the solicitation and contract closeout phases. The 411th CSBs process maturity is rated as 'Basic' for the solicitation, contract administration, and contract closeout phases. They ranked 'Structured' for the procurement planning, solicitation planning, and source selection phases.

Figure 8 shows procurement planning for both CSBs. The 409th CSB starts relatively high at 1.1, signifying the presence of established processes, but immediately drops at 1.2 and 1.3, showing that these processes are not mandatory or enforced. For the 411th CSB, another relative high at 1.1 signifies they also have established processes but also lack standardization, and their processes are also not fully mandated, or enforced. The 411th CSB has a second high at 1.7 which signifies strong integration with other organizational processes during this phase.







In the solicitation planning phase, as shown in Figure 9 for both CSBs, the lowest items for the 409th CSB correspond to measurement, particularly item 2.9 which indicates a lack of efficiency and effectiveness metrics used during this phase. Their other low point, 2.3, indicates that the 409ths documents are not standardized or automated. The highest point, 4.3, indicates strong integration throughout the 409th CSB in this phase. The 411th CSB's solicitation planning has no drastic highs or lows but process measurement is the lowest (2.9 and 2.10), along with standardization of mandatory processes (2.2).







In the solicitation phase, as shown in Figure 10, management support (3.5) and having established processes (3.1) are relatively high for the 409th CSB while their weakest items measure how standardized, mandatory (3.2), and well-documented (3.3) those processes are. The drop at item 3.7 shows a lack of integration at the 409th CSB during this phase. The 411th CSBs scores show a relatively even measurement of items supporting the solicitation phase, with a small drop in process integration at 3.8 indicating a relative weakness in not incorporating inputs and recommendations from industry.



Figure 10. CSB Solicitation Results



Figure 11 shows the results for the source selection phase. The 409th CSB has highs for management support (4.5), while process integration and measurement (4.8, 4.9, and 4.10) are the weakest. Process Integration remains a relative weakness for the 411th CSB continuing into this phase. Their relative high at 4.1 indicates the existence of established processes, but the immediate dip at 4.2 and 4.3 indicates that these processes are less standardized, mandatory, and documented than they could be.





In the contract administration phase, shown in Figure 12, the strongest item for the 409th CSB is having established processes (5.1), while those processes being well-documented is the weakest (5.3). This also signifies a lack of automation in these processes. The 411th CSB has a relative weakness in process integration during this phase, as shown at 5.8. The highest score for the 411th CSB once again corresponds to having established processes (5.1) but is again followed by lower scores for those processes being standardized, mandatory, and documented (5.2 and 5.3).





Figure 12. Contract Administration Results

Figure 13 shows the results for the contract closeout phase. The high in this phase for the 409th CSB is having established processes (6.1), while those processes being documented (6.3) and using efficiency and effectiveness metrics in systematic evaluations (6.8) are their weakest. The highest score for the 411th CSB is for 'process results' (6.4) which indicates that while the processes to support this phase are less established, documented, and integrated, management support is relatively low; and metrics and best practices are not applied consistently, the result is still a successful closeout process.



Figure 13. Contract Closeout Results



When the CMMM results are shown by key process enabler rather than by key process area, different patterns can be identified. Figure 14 shows process strength across all phases. Peaks for both CSBs early in each phase show that processes are established (1.1, 2.1, 3.1, 4.1, 5.1, and 6.1), but are less standardized and mandatory (1.2, 2.2, 3.2, 4.2, 5.2, and 6.2), and even less documented (1.3, 2.3, 4.3, 5.3, and 6.3).



Figure 14. Process Strength

Figure 15 shows the 'successful results' process enabler across all phases. Results for the 409th CSB depict a drop in maturity in the solicitation and contract closeout phases, which demonstrates that the results from the solicitation and contract closeout phases are less successful than other phases. This corresponds cleanly to those being the phases with the lowest maturity rating for the 409th and signal that the 409th could benefit most by focusing effort on improving these phases. This correlation does not carry over to the 411th CSB as while their results are the most successful at source selection (which corresponds to their highest level of maturity) their solicitation and contract administration processes are less successful than other, more mature, phases.







Figure 16 shows management support across all phases. Both CSBs show a precipitous drop in management support after source selection. This matches the pattern identified in the literature review portion of this research, that management across the DoD is less invested in the post-award phases of contract management.



Figure 16. Management Support

Figure 17 shows process integration across all phases for both CSBs. The peaks for the 409th CSB at 2.6 and 5.9 indicate higher use of cross-functional teams in solicitation planning and contract administration, while the low in contract closeout demonstrates less organizational attention paid to this phase. The relative highs for the



411th CSB at 1.7, 2.7, 4.9, and 5.7 indicate that contracting processes are well incorporated with other processes in the brigade even if multifunctional teams are not always used. The drop after source selection indicates that the 411th CSB as an organization does not emphasize post-award phases, as non-contract management functional areas participate less in these phases.



Figure 17. Process Integration

Figure 18 depicts process measurements for both CSBs across all phases of contract management. It shows the 409th CSB has relative lows for each phase in the use of efficiency and effectiveness metrics (1.9, 2.9, 3.9, 4.10, 5.10, and 6.8) while incorporating lessons learned and best practices is a relative high in each phase (1.10, 2.10, 3.10, 4.11, 5.11, 6.10). For the 411th CSB, the peak at 4.11 represents the incorporation of lessons learned and best practices in source selection, while the low point at 6.9 reflects the lack of the same in contract closeout.





Figure 18. Process Measurement

G. IMPLICATIONS OF THE FINDINGS

While the results of this research are not able to be generalized across federal procurement, the DoD, or even Army Contracting Command as a whole, there are implications that can be garnered from this research. The largest of these is the correlation between management support and process maturity. Figures 19 and 20 show this correlation by graphing the management support process enabler and the CMMM process maturity scores on the same chart, though with different Y-axis. With a pattern across both organizations of higher maturity ratings for pre-award and award process areas as compared to those for post-award areas, perhaps leaders in these organizations put most of their efforts into emphasizing and supporting these earlier process areas, at the expense of the latter ones. The post award phases need more management attention, primarily because those are the phases with the lowest maturity levels across the assessed organizations and typically across the DoD. Equally important, however, is that these are the phases where the actual work of the contract is being done. Management support needs to continue through the end of the contract for the contract to succeed. Many contract management issues, such as dealing with unqualified Contract Officer Representatives, defective specifications, cure and show-cause notices, only arise in the post-award phases, management support is required for dealing with the problems.





Figure 19. 409th CSB Management Support and Process Maturity



Figure 20. 411th CSB Management Support and Process Maturity

Neither of these organizations assessed above Level 3 (Structured) for any process area. This could be the case because these organizations are focused on awarding individual contract actions and have not yet investigated fully integrating processes with external organizations or continuous process improvement. Whatever the cause, one way of addressing this could be to foster organizational learning through knowledge transfer.



Senior leaders should look at other organizations that are more mature and identify best practices to improve the maturity of their own organizations. Managers can benchmark their organization with similar DoD contracting organizations to find out what steps those organizations have taken to be at higher maturity levels and try to emulate those. The CMMM measures practice, not policy, so to emulate another organization's higher maturity rating, management needs to identify what is being done in more mature organizations and replicate that in their own; replicating policy is unlikely to work on its own.

H. RECOMMENDATIONS BASED ON THE FINDINGS

The key process activities discussed in Chapter II should be the focus of improvement efforts in each process area. The following recommendations address each of the key process areas for each unit.

1. Recommendations for the 409th CSB

According to the survey results, 409th CSB respondents view their organization as having Level 2 basic maturity in the procurement planning, solicitation planning, source selection, and contract administration process areas. They view their organization as having Level 1 ad hoc maturity in the solicitation and contract closeout process areas, implying these areas may require more attention and improvement efforts from leadership.

a. Improve Procurement Planning to Level 3 Structured

For Level 3 structured maturity in this process area, leaders should ensure that, as related to relevant key process activities such as market research, acquisition plan documentation, developing estimates of cost and schedule, and selection of contract type (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key



contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

b. Improve Solicitation Planning to Level 3 Structured

For Level 3 structured maturity in this process area, leaders should ensure that, as related to relevant key process activities such as utilization of documents and forms that are standardized, going paperless and automated with their processes, and optimizing solicitations' structure and content (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

c. Improve Source Selection to Level 3 Structured

For Level 3 structured maturity in this process area, leaders should ensure that, as related to relevant key process activities such as incorporating optimal evaluation criteria, rigorously evaluation proposals against all available data points for comparison, and conducting negotiations (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

d. Improve Contract Administration to Level 3 Structured

For Level 3 structured maturity in this process area, leaders should ensure that, as related to relevant key process activities such as assignment of contracts to appropriate



individuals or teams, holding pre-performance meetings, and contract change management and dispute resolution (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

e. Improve Solicitation to Level 2 Basic

For Level 2 basic maturity in this process area, leaders should ensure that, as related to relevant key process activities such as utilization of qualified offerors lists, seeking new sources via advertisements and notices, and conducting pre-solicitation conferences (Garrett & Rendon, 2005), the organization has at least some "basic contract management processes and standards," even if "these processes are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that at least "some formal documentation has been developed for these established contract management processes and standards," though the unit may "not consider these contract management processes or standards established or institutionalized throughout the entire organization" (Garrett & Rendon, 2005, p. 50).

f. Improve Contract Closeout to Level 2 Basic

For Level 2 basic maturity in this process area, leaders should ensure that, as related to relevant key process activities such as documenting closeout and termination processes; using standard documents and checklists for these activities; and confirming work completion, full payment, and release of claims before closing out contracts (Garrett & Rendon, 2005), the organization has at least some "basic contract management processes and standards," even if "these processes are required only on selected complex, critical, or high-visibility contracts, such as contracts meeting certain dollar thresholds, or



contracts with certain customers" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that at least "some formal documentation has been developed for these established contract management processes and standards," though the unit may "not consider these contract management processes or standards established or institutionalized throughout the entire organization" (Garrett & Rendon, 2005, p. 50).

2. Recommendations for the 411th CSB

According to their survey results, 411th CSB respondents view their organization as having Level 3 structured maturity in the procurement planning, solicitation planning, and source selection process areas. The respondents from the 411th CSB view their organization as having Level 2 basic maturity in the solicitation, contract administration, and contract closeout process areas, implying these areas may require more attention and improvement efforts from leadership.

a. Improve Procurement Planning to Level 4 Integrated

For Level 4 integrated maturity in this process area, leaders should ensure that, as related to relevant key process activities such as market research, acquisition plan documentation, developing estimates of cost and schedule, and selection of contract type (Garrett & Rendon, 2005), the organization has "contract management processes that are fully integrated with other organizational core processes such as financial management, schedule management, performance management, and systems engineering" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that RA representatives are integral members of the team and that "management [at least] periodically uses metrics to measure various aspects of the contract management process and to make contracts-related decisions" (Garrett & Rendon, 2005, pp. 50–51).

b. Improve Solicitation Planning to Level 4 Integrated

For Level 4 integrated maturity in this process area, leaders should ensure that, as related to relevant key process activities such as utilization of documents and forms that are standardized, going paperless and automated with their processes, and optimizing solicitations' structure and content (Garrett & Rendon, 2005), the organization has "contract management processes that are fully integrated with other organizational core



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL processes such as financial management, schedule management, performance management, and systems engineering" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that RA representatives are integral members of the team and that "management [at least] periodically uses metrics to measure various aspects of the contract management process and to make contracts-related decisions" (Garrett & Rendon, 2005, pp. 50–51).

c. Improve Source Selection to Level 4 Integrated

For Level 4 integrated maturity in this process area, leaders should ensure that, as related to relevant key process activities such as incorporating optimal evaluation criteria, rigorously evaluation proposals against all available data points for comparison, and conducting negotiations (Garrett & Rendon, 2005), the organization has "contract management processes that are fully integrated with other organizational core processes such as financial management, schedule management, performance management, and systems engineering" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that RA representatives are integral members of the team and that "management [at least] periodically uses metrics to measure various aspects of the contract management process and to make contracts-related decisions" (Garrett & Rendon, 2005, pp. 50–51).

d. Improve Solicitation to Level 3 Structured

For Level 3 structured maturity in this process areas, leaders should ensure that, as related to relevant key process activities such as utilization of qualified offerors lists, seeking new sources via advertisements and notices, and conducting pre-solicitation conferences (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).



e. Improve Contract Administration to Level 3 Structured

For Level 3 structured maturity in this process areas, leaders should ensure that, as related to relevant key process activities such as assignment of contracts to appropriate individuals or teams, holding pre-performance meetings, and contract change management and dispute resolution (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

f. Improve Contract Closeout to Level 3 Structured

For Level 3 structured maturity in this process areas, leaders should ensure that, as related to relevant key process activities such as documenting closeout and termination processes; using standard documents and checklists for these activities; and confirming work completion, full payment, and release of claims before closing out contracts (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" and that "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50). Leaders should also ensure that "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" and that the leaders provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).

3. General Recommendations

a. Leadership Support for Post-Award Process Areas

Because process maturity ratings decreased significantly after the source selection process area for both surveyed organizations, it would behoove leaders of these



organizations to ensure continued support and emphasis for the contract administration and contract closeout process areas. Efforts toward successful contract management do not end at contract award. These post-award areas are where some of the more difficult and critical actions and decisions may be needed. Ineffectively managing CORs, defective specifications or work statements, or necessary communications such as showcause or cure notices can lead to contracts falling short of mission accomplishment for RAs.

b. Opportunities for Organizational Learning, Transfer of Knowledge

Any contracting organization that does not rate Level 5 (optimized) in all six process areas has room to improve. DoD contracting organizations exist who have rated more mature in each process area than the organizations involved in this research. These CSBs should seek out other such contracting organizations who have participated in CMMM-related research for the purposes of organizational learning and knowledge transfer from benchmark offices and units. CSBs looking to gain knowledge from organizations with more mature processes should attempt to find out specific steps those more mature organizations have taken to improve their process maturity levels and strive to emulate those procedures and best practices.

I. SUMMARY

The purpose of this chapter was to present the findings of this research. The chapter began with the methodology, including how respondents were selected and how the study was distributed. It continued with the presentation of the actual CMMM data, which was broken down by CSB and presented both by key process area and by process enabler. It next discussed the implications of this research. It concluded by providing recommendations for process maturity improvements. The next chapter is the summary of the research.



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V. SUMMARY

A. INTRODUCTION

The purpose of this chapter is to summarize the research, present our conclusions, and provide our recommendations for further research.

B. SUMMARY

The U.S. Army faces significant challenges in expeditionary contracting, where it spends tax dollars overseas. In 2007, the Commission on Army Acquisition and Program Management in Expeditionary Operations identified numerous issues including in contracting competency and systemic oversight. These deficiencies compound the challenges faced by DoD contract management professionals when deploying. To address these challenges, the CMMM offers a framework for assessing contract management processes maturity. While the CMMM has successfully evaluated domestic DoD organizations, prior to this research it had not been applied to overseas expeditionary contracts, helps the Army enhance contract management maturity, identify systemic weaknesses, and improve mission success in OCONUS contracting operations.

The purpose of this research was to conduct a process capability assessment on OCONUS Army Contracting Organizations to determine if there is a change in process maturity caused by the expeditionary environment. The expanded purpose was to collect these organizations' self-assessments of process maturity levels in their home organizations (garrison environments) and determine how those process maturity levels change when these organizations deploy or move forward to expeditionary locations. This study built upon findings from earlier uses of the CMMM and analyzed the changes in process maturity that occur when OCONUS contracting personnel move into environments that are more austere than their home stations.

C. CONCLUSION

Our assessment of the 409th, 411th, and 414th CSBs enabled us to answer the following research questions.



ACQUISITION RESEARCH PROGRAM DEPARTMENT OF DEFENSE MANAGEMENT NAVAL POSTGRADUATE SCHOOL (1) What is the contract management process maturity level for the 409th, 411th, and 414th CSBs at their home stations?

	Procurement Planning	Solicitation Planning	Solicitation	Source Selection	Contract Admin.	Contract Closeout
Optimized						
Integrated						
Structured						
Basic	Х	Х		Х	Х	
Ad-Hoc			Х			Х

Table 4.409th CSB Home Station Process Maturity

Table 5.411th CSB Home Station Process Maturity

	Procurement Planning	Solicitation Planning	Solicitation	Source Selection	Contract Admin.	Contract Closeout
Optimized						
Integrated						
Structured	Х	Х		X		
Basic			Х		Х	Х
Ad-Hoc						

This research was not able to collect data from sufficient eligible members of the 414th CSB to make any conclusions about their process maturity.

What is the contract management process maturity level for the 409th,411th, and 414th CSBs at their expeditionary locations?

This research was not able to collect sufficient expeditionary data to measure expeditionary process maturity in these CSBs.

(3) What are the effects of expeditionary contracting on the U.S. Army's contract management processes?

As this research was not able to collect sufficient expeditionary data to make conclusions about expeditionary process maturity, we are equally unable to make any conclusions about the effect of the expeditionary environment on contract management process maturity. The limited data we did collect, however, did not show any significant difference in maturity between home station and expeditionary locations.

(4) What recommendations can be made to these brigades to improve process maturity?

The following recommendations were provided for these organizations to improve process maturity (complete recommendations were provided in Chapter IV):



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- 1. For the 409th CSB to achieve Level 3 structured maturity in the procurement planning area, leaders should ensure that, as related to relevant key process activities such as market research and acquisition plan documentation (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" (Garrett & Rendon, 2005, p. 50).
- 2. For the 409th CSB to achieve Level 3 structured maturity in the solicitation planning area, leaders should ensure that, as related to relevant key process activities such as utilization of documents and forms that are standardized and optimizing solicitations' structure and content (Garrett & Rendon, 2005), "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" (Garrett & Rendon, 2005, p. 50).
- 3. For the 409th CSB to achieve Level 3 structured maturity in the source selection area, leaders should ensure that, as related to relevant key process activities such as incorporating optimal evaluation criteria and conducting negotiations (Garrett & Rendon, 2005), they provide "guidance, direction, and even approval of key contracting strategy, decisions, . . . and contract management documents" (Garrett & Rendon, 2005, p. 50).
- 4. For the 409th CSB to achieve Level 3 structured maturity in the contract administration area, leaders should ensure that, as related to relevant key process activities such as assignment of contracts to appropriate individuals or teams and contract change management and dispute resolution (Garrett & Rendon, 2005), "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50).
- 5. For the 409th CSB to achieve Level 2 basic maturity in the solicitation area, leaders should ensure that, as related to relevant key process activities such as utilization of qualified offerors lists and conducting presolicitation conferences (Garrett & Rendon, 2005), the organization has at least some "basic contract management processes and standards," even if "these processes are required only on selected complex, critical, or highvisibility contracts, such as contracts meeting certain dollar thresholds, or contracts with certain customers" (Garrett & Rendon, 2005, p. 50).
- 6. For the 409th CSB to achieve Level 2 basic maturity in the procurement planning area, leaders should ensure that, as related to relevant key process activities such as documenting closeout and termination processes and using standard documents and checklists for these activities (Garrett & Rendon, 2005), at least "some formal documentation has been developed for these established contract management processes and standards," though the unit may "not consider these contract management processes or standards established or institutionalized throughout the entire organization" (Garrett & Rendon, 2005, p. 50).



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- 7. For the 411th CSB to achieve Level 4 integrated maturity in the procurement planning area, leaders should ensure that, as related to relevant key process activities such as market research and acquisition plan documentation (Garrett & Rendon, 2005), the organization has "contract management processes that are fully integrated with other organizational core processes such as financial management, schedule management, performance management, and systems engineering" (Garrett & Rendon, 2005, p. 50).
- 8. For the 411th CSB to achieve Level 4 integrated maturity in the solicitation planning area, leaders should ensure that, as related to relevant key process activities such as utilization of documents and forms that are standardized and optimizing solicitations' structure and content (Garrett & Rendon, 2005), RA representatives are integral members of the team and that "management [at least] periodically uses metrics to measure various aspects of the contract management process and to make contracts-related decisions" (Garrett & Rendon, 2005, pp. 50–51).
- 9. For the 411th CSB to achieve Level 4 integrated maturity in the source selection area, leaders should ensure that, as related to relevant key process activities such as incorporating optimal evaluation criteria and conducting negotiations (Garrett & Rendon, 2005), the organization has "contract management processes that are fully integrated with other organizational core processes such as financial management, schedule management, performance management, and systems engineering" (Garrett & Rendon, 2005, p. 50).
- 10. For the 411th CSB to achieve Level 3 structured maturity in the solicitation area, leaders should ensure that, as related to relevant key process activities such as utilization of qualified offerors lists and seeking new sources via advertisements and notices (Garrett & Rendon, 2005), "contract management processes and standards are fully established, institutionalized, and mandated throughout the organization" (Garrett & Rendon, 2005, p. 50).
- 11. For the 411th CSB to achieve Level 3 structured maturity in the contract administration area, leaders should ensure that, as related to relevant key process activities such as assignment of contracts to appropriate individuals or teams and holding pre-performance meetings (Garrett & Rendon, 2005), "formal documentation has been developed for these . . . processes and standards" (Garrett & Rendon, 2005, p. 50).
- 12. For the 411th CSB to achieve Level 3 structured maturity in the contract closeout area, leaders should ensure that, as related to relevant key process activities such as documenting closeout and termination processes and using standard documents and checklists for these activities (Garrett & Rendon, 2005), "the organization allows the tailoring of processes and documents, allowing for the unique aspects of each contract" (Garrett & Rendon, 2005, p. 50).



- 13. Both organizations' leaders should strive to improve support of and place more emphasis on post-award process areas and their key practice activities.
- 14. Both organizations should seek out other DoD contracting organizations with more mature processes and learn and replicate specific steps and best practices to improve maturity in their processes.

D. OPPORTUNITIES FOR FURTHER RESEARCH

A follow-up study should be conducted of these CSBs, or any other organizations that have already participated in a CMMM evaluation, to determine if any of these organizations' processes have matured after implementing process improvement initiatives. Through our literature review we were unable to identify a single DoD organization that has been through a CMMM evaluation and been reevaluated after a period to allow for the process improvements to be implemented. These organizations should be assessed again to measure any changes to their process maturity over time.

Future researchers should attempt to obtain results of procurement management reviews or self-assessment reviews to compare against CMMM findings and triangulate the data.

Additionally, a deeper investigation into the effect of the expeditionary environment on process maturity is warranted. Sufficient data are needed before any firm conclusions can be made, as this research did not involve high response rates to the survey. Future studies dedicated to expeditionary process maturity, with higher response rates or a more direct method of data collection, could answer the research questions that this research was unable to address.



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LIST OF REFERENCES

- AFARS 5101.690(b) (2024). https://www.acquisition.gov/afars/part-5101-federalacquisition-regulation-system#AFARS 5101.690
- Chang W., Levine G., & Philaphandeth, K. (2012). An analysis of contract management processes at the Space and Missile Systems Center and the Air Force Life Cycle Management Center (Wright–Patterson) using the Contract Management Maturity Model [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/entities/publication/ffdad991-234a-46de-b1e4-7ffbb3dc2877
- Gansler, J., Berteau, D. J., Maddox, D. M., Oliver, D. R., Salomon, L. E., & Singley, G. T. (2007). Urgent reform required: Army expeditionary contracting: Report of the commission on Army acquisition and program management in expeditionary operations. https://apps.dtic.mil/sti/tr/pdf/ADA515519.pdf
- Garrett, G. A., & Rendon, R. G. (2005, September). Managing contracts in turbulent times: The Contract Management Maturity Model. *Contract Management*, 48–57. https://calhoun.nps.edu/handle/10945/40370
- Gary, C., & Petree, C. (2014). Assessment of Aberdeen Proving Ground Army Contracting Command, contract management process [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/entities/ publication/e991835b-412d-4e0d-b9e0-1167b45876ab
- Jackson, C. (2007). Analysis of the 314th Contracting Squadrons contract management capability Using the Contract Management Maturity Model (CMMM) [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/entities/publication/43192f20-5d7e-4ba4-8051-6d8a6481889b
- Jeffers, D. (2009) Contract specialist turnover rate and contract management maturity in the National Capital Region Contracting Center: An analysis [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/ entities/publication/bb3bb3e4-f0aa-42f5-bde4-84bd67dafc79
- Kerzner, H. (2001). *Strategic planning for project management using a project management maturity model*. John Wiley & Sons.
- Management Policies, 10. U.S.C. § 1701 (2024). https://www.govinfo.gov/app/details/ USCODE-2023-title10/USCODE-2023-title10-subtitleA-partII-chap87-subchapIsec1701



- Paulk, M. C., Curtis, B., Chrissis, M. B., & Weber, C. V. (1993). Capability maturity model, version 1.1. *IEEE Software*, 10(4), 18–27. https://doi.org/10.1109/ 52.219617
- Puma, K. P., & Scherr, B. A. (2009). Assessing contract management maturity: U.S. Army Joint Munitions and Lethality Contracting Center, Army Contracting Command, Picatinny Arsenal [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/entities/publication/195c8982-204b-410d-b5e5-3b86627c8af4
- Rendon, J. M. (2018, April 30). Auditability in procurement: An analysis of DoD contracting professionals' procurement fraud knowledge. *Proceedings of the Fifteenth Annual Acquisition Research Symposium*, 587–605. https://dair.nps.edu/ bitstream/123456789/1581/1/SYM-AM-18-068.pdf
- Rendon, J. M., & Rendon, R. G. (2015, March 22). Defense procurement: An analysis of contract management internal controls (NPS-CM-15-003). Naval Postgraduate School. https://apps.dtic.mil/sti/tr/pdf/AD1016670.pdf
- Rendon, R. G. (2008). Procurement process maturity: Key to performance measurement. Journal of Public Procurement, 8(2), 200–214. https://doi.org/10.1108/JOPP-08-02-2008-B003
- Rendon, R. G. (2009). Contract management process maturity: Analysis of recent organizational assessments. *Proceedings of the Sixth Annual Acquisition Research Symposium*, 298–307. https://hdl.handle.net/10945/33394
- Rendon, R. G. (2015). Benchmarking contract management process maturity: A case study of the U.S. Navy. *Benchmarking: An International Journal*, 22(7), 1481– 1508. https://core.ac.uk/download/pdf/343435967.pdf
- Rendon, R. G., & Rendon, J. M. (2015). Auditability in public procurement: An analysis of internal controls and fraud vulnerability. *International Journal of Procurement Management*, 8(6), 710–730.
- Stratton, R. W. (2006). *The earned value management maturity model*. Management Concepts. https://archive.org/details/earnedvaluemanag0000stra/page/n3/ mode/ 2up?view=theater
- Valentine, Z., & Croston, G. (2015), Analysis of the 918th Contracting Battalion and 410th Contracting Support Brigade utilizing the Contract Management Maturity Model [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. https://calhoun.nps.edu/entities/publication/d63c3fba-b362-4c74-9f60-4a4874abc965



Wooluru, Y., Swamy, D. R., & Nagesh, P. (2014). The process capability analysis – A tool for process performance measures and metrics – A case study. *International Journal for Quality Research*, 8(3) 399–416. https://www.researchgate.net/profile/Yerriswamy-Wooluru/publication/267512995_The_process_capability_analysis_-A_tool_for_process_performance_measures_and_metrics_-_A_case_study/links/5451fc8b0cf285a067c6b0c2/The-process-capability_analysis-A-tool-for-process-performance-measures-and-metrics-A-case-study.pdf





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

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