



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**AN ANALYSIS OF COSTS AND BENEFITS
ASSOCIATED WITH INITIAL CONTRACTING
TECHNICAL EDUCATION AND TRAINING FOR
UNRESTRICTED MARINE OFFICERS**

by

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March 2017

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**AN ANALYSIS OF COSTS AND BENEFITS ASSOCIATED WITH INITIAL
CONTRACTING TECHNICAL EDUCATION AND TRAINING FOR
UNRESTRICTED MARINE OFFICERS**

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ABSTRACT

This thesis examines the costs and benefits associated with the three courses of action the Marine Corps has used to provide initial contracting training and education to unrestricted Marine officers. The Marine Corps' contracting officer inventory is limited because it does not require Marines to execute multiple contracting tours. I analyzed which course of action would yield the biggest return to the Marine Corps while strengthening the Marine Corps' contracting officer workforce. All three courses of action analyzed allow the Marine to obtain an advanced degree, complete professional military education for his or her grade, and complete the Defense Acquisitions Workforce Improvement Act Level III contracting education required for career field certification.

The research shows that the best model to provide initial contracting training and education to Marine unrestricted officers is to use the Contingency Contracting Officer Course or the Defense Acquisition University. After the officer's initial contracting tour, the Marine Corps should use the Naval Postgraduate School as a retention tool to ensure the Marine will execute at least a second contracting tour. After the second contracting tour, the Marine should have the opportunity to make a lateral move into the contracting career field to become the Marine's primary military occupational specialty.

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LIST OF ACRONYMS AND ABBREVIATIONS

APU	American Public University
CBA	cost benefit analysis
CCF	contingency contracting force
CCLEB	Commandant's Career-Level Education Board
CCO	contingency contracting officer
CCOC	Contingency Contracting Officer Course
CDET	College of Distance Education and Training
CPIB	Commandant's Professional Intermediate-Level Board
COA	course of action
CSCDEP	Command Staff College Distance Education Program
DAMS	Defense Acquisition Management System
DAU	Defense Acquisitions University
DAWIA	Defense Acquisitions Workforce Improvement Act
DLP	distance learning program
DOD	Department of Defense
DPME	Distance Professional Military Education
EWSDEP	Expeditionary Warfare School Distance Education Program
FAR	Federal Acquisitions Regulation
JCIDS	Joint Capabilities Integration & Development System
KO	contracting officer
M&IE	meals and incidental expenses
MARADMIN	Marine administrative
MCSSS	Marine Corps Service Support School

MBA	Masters of Business Administration
MSCM	Masters of Science in Management
MOS	military occupational specialty
NPS	Naval Postgraduate School
NPS DLP	Naval Postgraduate School Distance Learning Program
NWC	Naval War College
OCS	operational contract support
OJT	on-the-job training
PCS	permanent change of station
PMOS	primary military occupational specialty
PME	professional military education
POV	privately owned vehicle
PPBE	Planning, Programing, Budgeting, & Execution
RCO	Regional Contracting Office
RMC	regular military compensation
SEP	Special Education Program
TA	tuition assistance
TAD	temporary assigned duty
UMUC	University of Maryland University College
USC	United States Code
USMC	United States Marine Corps

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I. INTRODUCTION

A. BACKGROUND

Military contracting officers employ or hire contractors to perform a service or provide a product for the Department of Defense (DOD). The DOD and its service components, in this case the United States Marine Corps (USMC), need commercial and non-commercial end items and numerous different types of services to help the warfighters complete their missions effectively and successfully. Responsible acquisitions and procurement of these supplies and services from industry is one of the many duties of contracting officers and specialists when they are performing within the Marine Corps' acquisition workforce. Contracting officers and other acquisitions professionals are key enablers in ensuring that their organizations are well equipped with outsourced commercial and non-commercial items and are prepared for any mission.

The primary objective of a contracting officer is to procure quality products and services that satisfy the warfighter's requirements while keeping with federal acquisition regulations. The Big "A" Defense Acquisition System is a complicated formula with many stakeholders and overseers. Three decision support templates are within the Big "A" Defense Acquisitions framework, with a Program Manager in the center managing a program within the cost, schedule, and performance constraints. The Joint Capabilities Integration & Development System (JCIDS) within the requirements generation system determines what is needed by the warfighter. Planning, Programing, Budgeting, & Execution (PPBE) represents the resource allocation portion, and the DOD Directive 5000.01 and Instruction 5000.02 establishes the guidelines of the final decision support template, the Defense Acquisition Management System (DAMS).

The Marine Corps' warranted contracting officers are required to negotiate and enforce the legally binding contracts with industry contractors. The DOD and the Marine Corps will always rely on industry to provide the best supplies and services needed to improve its war fighting capability. The dependence of these outsourced supplies and services will always be linked to the professionals who are responsible for

acquiring them. Unfortunately, the Marine Corps has experienced numerous challenges in filling critical contracting billets with contracting officers who have done multiple tours within the contracting career field. The Marine Corps has altered how it provides initial training and education to unrestricted Marine officers to become new contracting officers over the years.

Prior to 2008, Marine officers voluntarily applied to the Marine Corps Special Education Program (SEP) to attend the Naval Postgraduate School (NPS) for 18 months. Upon graduation, the Marine received a master's degree and contracting as a secondary military occupational specialty (MOS). Also, the Marine would be slated to fill a critical contracting officer billet vacancy anywhere throughout the Marine Corps. This billet would be a thirty-six month tour and the contracting MOS would become the Marines' secondary MOS for the rest of his or her career.

In 2008, the Marine Corps coordinated with the Defense Acquisitions University (DAU) and created its own Contingency Contracting Officer Course (CCOC). This move increased the rate at which Marine officers entered the contracting career field. This move also allowed the Marine Corps to stop sending Marines to NPS to study under the eighteen-month acquisition and contracting curriculum. Upon graduating from the new four-month CCOC, Marines received contracting as a secondary MOS and were slated to fill a critical contracting officer billet regardless of the location. In 2013, the Marine Corps started soliciting for more applicants to join the contracting career field by offering them the opportunity to participate in the Naval Postgraduate School Distance Learning Program (NPS DLP) under curriculum 835, Master of Science in Contract Management (MSCM). "Upon the completion of this program, the officer will receive a Masters of Science in Contract Management and apply for the additional MOS of 3006, Contingency Contracting Officer" (USMC, 2013).

Until 2015, the DAU Contingency Contracting Officer Course and the NPS DLP were the only ways a Marine officer could join the contracting career field. In 2015, the Marine Corps returned to requiring officers to attend NPS as resident students in order to receive the required education and technical contracting training, but only students who

were selected from the annual competitive Commandant's Career-Level Education Board (CCLEB) or Commandant's Professional Intermediate-Level Education Board (CPIB) were eligible to attend NPS.

No matter the route, whether resident NPS, NPS DLP, or CCOC, Marine officers will do a thirty-six month tour as a contingency contracting officer and are not required to stay in the MOS after executing their initial contracting tour. After their initial contracting tour, the Marine officers are encouraged to go back to their primary military occupational specialty (PMOS) to stay competitive for future promotions and command opportunities. The officer is not required to return to the contracting MOS ever again.

The education and skills obtained through the multiple routes in becoming a contracting officer for the Marine Corps are hard to keep sharp if the Marine is not allowed to stay within the MOS full time. Federal regulations and instructions that govern the contracting community change on an annual basis or sometimes sooner. It is very difficult for Marines to keep a high level of proficiency if they are going in and out of the contracting career field. Marines who have earned the additional MOS of contracting officer should have the opportunity to become Directors and leaders of contracting organizations across the Marine Corps. In order to do so, a high level of knowledge and proficiency is required. Without the appropriate level of experience, they will not be prepared for these leadership positions within contracting and they will not be on the same professional level as their counterparts in the other services within DOD.

This study will look at multiple courses of action the Marine Corps has taken to educate and provide initial contracting technical training and education to new contingency contracting officers. As mentioned earlier, after the initial contracting tour the officer will return to his or her primary MOS. In order to ensure that the Marine Corps has a cadre of experienced and technically proficient contingency contracting officers, the Marine Corps could allow Marines to execute a lateral move to the contracting career field, MOS 3006, at some point after their initial contracting tour. This would result in MOS 3006 becoming the Marine's primary MOS. During this study, the lateral move option will be explored.

The primary objective of this study will be to present the costs and benefits associated with each course of action. The overall benefit will be to use this information to determine how the Marine Corps can change the way it trains, assigns, and educates new contracting officers. Such a change maybe required to provide a better contingency contracting officer force equipped to handle the complexities in the defense acquisition system and prepare Marine officers for future leadership positions within the contracting career field.

The primary purpose of this research is to review the different ways unrestricted Marine officers receive initial contracting education and training in order to fill critical contracting billets throughout the USMC contingency contracting officer force. The analysis will also examine the costs and benefits associated with the different methods used by the Marine Corps. Then an analysis will determine the best method the USMC could use to make the contracting career field a primary MOS for unrestricted Marine officers. At the conclusion of the analysis, the study will identify the course of action that represents the most advantageous model the USMC should use to educate and train new contingency contracting officers that include a lateral move option that will give them the opportunity to make contracting a primary MOS.

B. RESEARCH QUESTIONS

The following primary research question will guide this study: “What is the ideal model the United States Marine Corps could use to educate and provide initial contracting technical training to new contingency contracting officers for unrestricted Marine officers?”

To answer this primary research question requires answering the following secondary question: “What are the costs and benefits associated with the variety of methods the Marine Corps have used to train and educate contracting officers?” To answer this question the following are the three courses of action (COA) that will be analyzed:

COA 1: Earning a master’s degree through NPS DLP, DAWIA Contracting Level III Equivalency, and PME Qualification.

COA 2: Earning a master's degree, PME Qualification, and DAWIA Contracting Level III Equivalency while attending Resident NPS.

COA 3: Earning a master's degree from an accredited civilian educational institution, PME Qualification, and DAWIA Contracting Level III education while attending the CCOC.

C. METHODOLOGY

After a short induction of the thesis, a literature review of contracting regulations and acquisitions reform initiatives will be conducted. Following the literature review, details of each course of action will be identified and analyzed. The analysis will examine the costs and benefits associated with providing the initial contracting technical training and education to new Marine contingency contracting officers. After considering the results of the analysis, the thesis will pinpoint the course of action that represents the most advantageous model the USMC should use to provide the initial contracting technical training and education to new Marine contingency contracting officers to facilitate an opportunity to establish contracting as a primary MOS.

My analysis of the costs and benefits correlated to each COA will be in accordance with the cost benefits analysis (CBA) process offered in OMB Circular No. A-94 guidelines (OMB, 2015). Additionally, a 2015 NPS MBA Professional Report, *Army Initial Acquisition Training: An Analysis of Costs and Benefits* by Curtis Booker, Keith Miner, and Stephanie Montano provided an excellent foundation for my approach to conducting this CBA. During my CBA, I will identify all costs and benefits that I think are relevant and achievable to calculate the overall cost and net benefits for each COA. Due to constraints, assumptions will be made to continue the analysis if or when barriers occur during the CBA. Any assumptions and other contributing factors considered throughout the CBA will be made to facilitate unbiased analyses. Below are the aforementioned CBA guidelines outlined in the OMB Circular No. A-94:

- (1) Identify all the elements of each COA to the best existent possible.
- (2) Determine all pertinent costs and benefits associated with each COA.

- (3) Calculate each COA's costs monetarily.
- (4) Calculate each COA's net benefits.
- (5) Conduct Sensitivity Analysis.
- (6) Conclusion and provide a recommendation.

II. LITERATURE REVIEW

A. INTRODUCTION

Congress has exercised oversight and control of the acquisition system through federal regulations, laws, and statutes for many years. Congressional overseers often survey the defense acquisition system used by contracting officers and other acquisitions professionals throughout the government to determine its overall effectiveness. This chapter will provide a historical view on how the contracting career field has changed within the DOD. The chapter will also include a review of statutory information and how it applies to the Marine Corps and its military contracting workforce, specifically unrestricted Marine officers. The chapter will conclude with a review of resources used to build my personal knowledge in how to execute a proper cost benefit analysis and how previous CBAs have been used to evaluate programs within the DOD.

B. EVOLVING CONTINGENCY CONTRACTING REGULATIONS

1. Commissions and the Call for Change

Government regulations pertaining to activities to effectively run and support the country have been in place since the nation's creation. Many things can affect the contracting community in any branch of the service. For an example, the current reduction of military forces and decreases in the DOD's budget can alter how products and services are acquired in support of national security. Throughout the years, the government has initiated a series of commissions to evaluate the acquisitions and contracting processes within the DOD. In reviewing the commissions and reform initiatives for this thesis, many of them identified material weaknesses in processes.

Similar to other systems used by the DOD, overseers will continue to seek opportunities to improve the defense acquisition system. In 1996, Table 1 was created by Lieutenant Colonel Stephen V. Reeves during his Executive Research Project, "The Ghosts of Acquisition Reform: Past, Present and Future." Reeves proved and clearly identified that since 1949 the defense acquisition system has a long history of having

process inefficiencies. Today, the new presidential administration has called for another reform initiative and changes are forthcoming to continue the improvement process.

Table 1. Acquisition Reform Initiatives and their Findings.

Source: Reeves (1996).

Commission	Who is in Charge	Process Inefficiency	Need for “Business Practice?”	Public v. Private Sectors	Acquisition Workforce
Hoover I, 1949	Centralize all acquisition under DoD	Excess costs, waste	Yes		
Rockefeller Committee, 1953	Centralize all acquisition under DoD	Excess costs, waste and fraud	Yes		
Hoover II, 1953	Centralized all acquisition under DoD	Excess costs, waste	Yes	Reduce/eliminate arsenal system	
McNamara Initiatives, 1961	Centralize all acquisition under DoD	Establish PPBS to control costs	Yes, Increased analysis		
Fitzhugh Commission, 1970	Decentralize. SecDef span of control too great.	Too much oversight-especially congress	Yes		Requires professional development
Commission on Gov’t Procurement, 1972	Centralize all acquisition under DoD	“Streamline” procurements through reducing regs.	Yes		Requires professional development
Grace Commission, 1983	Centralize all acquisition under DoD	Eliminate fraud, waste and abuse	Yes		
Packard Commission, 1985	Decentralize, SecDef span of control too great	Consolidate procurement regulations	Yes	Increase use of commercial products	Requires professional development
Defense Mgt Review, 1989	Centralize all acquisition under DoD	Eliminate fraud, waste and abuse	Yes	Increase use of commercial products	
Section 800 Panel, 1993		Consolidate procurement regulations	Yes	Increase use of commercial products	
National Performance Review, 1993	Centralize policy, decentralized execution	Consolidate procurement regulations	Yes	Increase use of commercial products	Requires professional development

2. Defense Acquisition Workforce Improvement Act

Many attempts have been made to improve the DOD's acquisition process. The most significant attempt at improvement is the implementation of the Defense Acquisition Workforce Improvement Act (DAWIA) in 1990. It required that the "DOD establish education and training standards, requirements, and courses for the civilian and military contracting workforce" (Title 10 USC, 2016). The DAWIA was modified by amendments to the United States Code (USC) Title 10 Chapter 87. Section 1724 states the following requirements for contracting officers within the military:

(a) Contracting Officers.—The Secretary of Defense shall require that, in order to qualify to serve in an acquisition position as a contracting officer with authority to award or administer contracts for amounts above the simplified acquisition threshold referred to in section 2304(g) of this title, an employee of the Department of Defense or member of the armed forces (other than the Coast Guard) must, except as provided in subsections (c) and (d)—

(1) have completed all contracting courses required for a contracting officer (A) in the case of an employee, serving in the position within the grade of the General Schedule in which the employee is serving, and (B) in the case of a member of the armed forces, in the member's grade;

(2) have at least two years of experience in a contracting position;

(3) (A) have received a baccalaureate degree from an accredited educational institution authorized to grant baccalaureate degrees, and (B) have completed at least 24 semester credit hours (or the equivalent) of study from an accredited institution of higher education in any of the following disciplines: accounting, business, finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management; and

(4) meet such additional requirements, based on the dollar value and complexity of the contracts awarded or administered in the position, as may be established by the Secretary of Defense for the position. (Title 10 USC, 2016)

Also in Section 1724 of Chapter 87, the following establishes the qualifications requirements for the civilian contracting personnel within the DOD's contracting workforce:

(b) GS–1102 Series Positions and Similar Military Positions.—

(1) The Secretary of Defense shall require that in order to qualify to serve in a position in the Department of Defense that is in the GS–1102 occupational series an employee or potential employee of the Department of Defense meet the requirements set forth in paragraph (3) of subsection (a). The Secretary may not require that in order to serve in such a position an employee or potential employee meet any of the requirements of paragraphs (1) and (2) of that subsection.

(2) The Secretary of Defense shall require that in order for a member of the armed forces to be selected for an occupational specialty within the armed forces that (as determined by the Secretary) is similar to the GS–1102 occupational series a member of the armed forces meet the requirements set forth in paragraph (3) of subsection (a). The Secretary may not require that in order to be selected for such an occupational specialty a member meet any of the requirements of paragraphs (1) and (2) of that subsection.

(c) Exceptions.—The qualification requirements imposed by the Secretary of Defense pursuant to subsections (a) and (b) shall not apply to an employee of the Department of Defense or member of the armed forces who—

(1) served as a contracting officer with authority to award or administer contracts in excess of the simplified acquisition threshold on or before September 30, 2000;

(2) served, on or before September 30, 2000, in a position either as an employee in the GS–1102 series or as a member of the armed forces in a similar occupational specialty;

(3) is in the contingency contracting force; or

(4) is described in subsection (e)(1)(B). (Title 10 USC, 2016)

A key amendment cleared the way for individuals who do not possess a four-year college degree from an accredited educational institution to enter the contracting workforce. In regard to the military, typically this would apply to enlisted personnel. The amendment to the education requirements gave the military an opportunity to allow other service members to join the contracting career field if they have earned a certain number of credits or semester hours in the study of any business related courses. At the time of this CBA, the required number of semesters' credit hours was twenty-four. Individuals

could also enter by passing an examination to show they possess the knowledge or the same potential of a person who has completed at least twenty-four semester hours at an accredited educational institution. These service members would usually make up the contingency force. The sub-paragraph titled “Contingency Contracting Force” is included below:

(f) Contingency Contracting Force.—The Secretary shall establish qualification requirements for the contingency contracting force consisting of members of the armed forces whose mission is to deploy in support of contingency operations and other operations of the Department of Defense, including—

(1) completion of at least 24 semester credit hours or the equivalent of study from an accredited institution of higher education or similar educational institution in any of the disciplines of accounting, business, finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, or organization and management; or

(2) passing an examination that demonstrates skills, knowledge, or abilities comparable to that of an individual who has completed at least 24 semester credit hours or the equivalent of study in any of the disciplines described in paragraph (1). (Title 10 USC, 2016)

3. Department of Defense 5000.52M Acquisition Career Development

In response to the DAWIA, the Secretary of Defense issued the DOD Directive 5000.52 “Defense Acquisition Education, Training, and Career Development Program” on 25 October 1991. The DOD 5000.52M of 1991 was replaced by the DOD 5000.52M in November 1995 and was renamed the Acquisition Career Development Program. Both manuals made it easier to track and enforce the acquisition workforce requirements delegated by Chapter 87 of Title 10 USC. The program outlined the standards individuals must adhere to in order to obtain career field certifications and it also provides guidance on career paths for the acquisition workforce (DOD 5000.52M, 1995).

The manual also implemented functional training, education, and experience thresholds for each of three newly created acquisition career field certification levels (DOD 5000.52M, 1995). The three levels were: DAWIA Level I, Level II, and Level III. Individuals who wanted to become a part of the acquisition workforce had to meet the appropriate certification standards in accordance with their desired career field (DOD

5000.52M, 1995). Table 2 shows the current contracting career field education, experience, and functional training requirements for each level.

Table 2. DAWIA Certification Requirements. Source: DAU (2016).

Certification Level	I	II	III
Education	- At least 24 semester hours in accounting, law, business, finance, contracts, purchasing, economics, industrial management, marketing, quantitative methods, or organization and management - Baccalaureate degree (Any Field of Study)	- At least 24 semester hours in accounting, law, business, finance, contracts, purchasing, economics, industrial management, marketing, quantitative methods, or organization and management - Baccalaureate degree (Any Field of Study)	- At least 24 semester hours in accounting, law, business, finance, contracts, purchasing, economics, industrial management, marketing, quantitative methods, or organization and management - Baccalaureate degree (Any Field of Study)
Experience	- 1 year of contracting experience	- 2 year of contracting experience	- 4 year of contracting experience
Functional Training	- CON 090 - CON 100 - CON 121 - CON 124 - CON 127 - CON 170 - CLC 025 - CLC 033 - CLC 057 - CLC 058	- All Level I Courses - ACQ 101 - CON 200 - CON 216 - CON 270 - CON 280 - CON 290 - CLC 051 - CLC 056 - HBS 428	- All Level I and II Courses - CON 360 - 1 Additional HBS courses - One of the courses below - ACQ 265 - ACQ 315 - ACQ 370 - CON 232 - CON 244 - CON 252 - CON 334 - CON 370

C. USMC CONTINGENCY CONTRACTING FORCE PROGRAM

Due to the realignment of its organizational structure, the Marine Corps implemented a new program to provide better operational contract support. The USMC

Contingency Contracting Force is organized and structured to execute Operational Contract Support (OCS) functions at all levels of support. Operational Contract Support is a logistics capability that must be planned and integrated across all combat functions and operational phases. Contracting expertise is essential to planning, coordination and integration of OCS. Within the CCF, 3006 MOS, Contingency Contracting Officer, will designate the Marine officer and the enlisted Marines will carry the 30XX MOS, Contingency Contracting Specialist, depending on their certification level (Draft CCF Marine Corps Order, 2015).

The CCF members will “fill operational billets throughout the Marine Corps as either OCS advisors (i.e., to plan, synchronize, integrate and facilitate contracted support) or contracting officers (KOs) (i.e., to plan and execute the contracting support functions)” (Draft CCF Marine Corps Order, 2015). Although contracting support is the core function of the OCS capability, it cannot operate in isolation without the other associated support functions of OCS. The CCF is trained to execute OCS capability through career progression in contracting to support all three functions of OCS (Draft CCF Marine Corps Order, 2015).

D. MARINE CORPS POLICY AND PROCEDURES FOR ASSIGNING UNRESTRICTED OFFICERS TO CONTRACTING OFFICER BILLETS

Following this historical review of the call for reform, evolving contingency contracting regulations, and key regulations that governs the contracting community, the report will now focus on examining how the Marine Corps educates and retain Marine officers to ensure that the Marine Corps has a healthy inventory of contracting officers at all times.

1. Marine Corps’ Strategy

Contracting officers serving in an acquisition billet must, at a minimum, meet certain qualification requirements to award and administer their contracts. Like every other service branch within the DOD, the Marine Corps has to ensure every member of its contracting workforce meet or exceed the qualifications outlined in Title 10 of the United States Code, Section 1724. These qualifications are:

- (1) Have completed all mandatory contracting courses required for a contracting officer at the grade level that the person is serving in;
- (2) Have at least two years of experience in a contracting position;
- (3) Have received a baccalaureate degree from an accredited institution authorized to grant baccalaureate degrees and have completed at least 24 semester credit hours (or the equivalent) of study from an accredited institution of higher education in any of the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management; and
- (4) Meet such additional requirements, based on the dollar value and the complexity of the contracts awarded or administered in the position, as may be established by the Secretary of Defense for the position. (Title 10 U.S.C, 2016)

To ensure that the Marine Corps can provide Marines that could potentially meet all the requirements inherent with being a warranted contracting officer, the Marine Corps on an annual basis screens, selects, and sends Marine officers to the campus of the Naval Postgraduate School to begin the journey of learning the art and science of becoming a credible acquisitions professional in the contracting career field. As outlined earlier, the Marine Corps has used multiple methods to attract and education Marines to allow them to become qualified contracting officers. Currently, the Marine Corps uses NPS and the Defense Acquisitions University as their primary sources to education Marine officers in the contracting career field.

2. Naval Postgraduate School Education

The details of the Marine Corps' Special Education Program are in the Marine Corps Order 1520.9F with change 1 and NPS is a part of that program. On an annual basis, a Marine Administration (MARADMIN) message is published that announces the Marines who have been selected to attend the Naval Postgraduate School. The message also specifics the curriculum each Marine shall study. The competitive process signifies that the Marine Corps places a high value on those it selects and sends to NPS.

The mission of NPS is:

to provide relevant and unique advanced education and research programs
to increase the combat effectiveness of commissioned officers of the

Naval Service to enhance the security of the United States. In support of the foregoing, and to sustain academic excellence, NPS and the DON foster and encourage a program of relevant and meritorious research which both supports the needs of Navy and Department of Defense while building the intellectual capital of Naval Postgraduate School faculty. (Naval Postgraduate School, 2016)

Under the Acquisition and Contract Management curriculum 815 at NPS, the student spends 18 months studying in a challenging six quarters of instructions. According to the NPS website:

The Acquisition and Contract Management curriculum is an interdisciplinary program, which integrates management theory, accounting, economics, finance, behavioral science, management theory, operations/systems analysis, and specific courses in acquisition and contracting. The requirements for entry are: Baccalaureate degree with above-average grades is required. Completion of at least two semesters of college algebra or trigonometry is considered to be the minimum mathematical preparation. An Academic Profile Code (APC) of 345 is required for entry. International students should refer to the Admissions section for current TOEFL and entrance requirements. (Naval Postgraduate School, 2016)

All services within the DOD are eligible to attend NPS. According to the NPS's website, "completion of the 815 curriculum qualifies officers in the United States Navy as Acquisition and Contract Management subspecialists with a subspecialty code of 1306P, Army officers as Functional Area 51C, and Marine Corps officers with a 9656 MOS" (Naval Postgraduate School, 2016). However, a change has occurred for the Marine Corps. Marine officers who attend NPS and graduates under the curriculum 815 will receive the secondary MOS of 3006, Contracting Officer. The education received under this curriculum will enable the officer to qualify for contracting career field certification. This is made possible because the officer will earn DAU equivalencies for Level III contracting under this curriculum. Also at the completion of the curriculum the officer will earn a Master of Business Administration with a focus on Acquisition and Contract Management (Naval Postgraduate School, 2016). Upon graduation, the Marine officer will be slated to fill a vacant contracting officer billet anywhere throughout the Marine Corps. The utilization tour would be a thirty-six month tour and the contracting MOS would become the Marines' secondary MOS for the rest of his/her career.

Unrestricted Marine officers are also eligible to earn a master's degree while enrolled in the NPS Distance Learning Program (NPS DLP). The officer earns a master's degree by completing a defense focused twenty-four month curriculum. The distance-learning program is associated with NPS curriculum number 835, Master of Science in Contract Management (MSCM). Similar to curriculum number 815 taken at the main NPS campus, the education received under this curriculum will enable the officer to qualify for contracting career field certification. The officer will earn DAU equivalencies for Level III contracting under this curriculum, also similar to the curriculum 815.

3. Utilization Tours

The Marine Corps officer who graduates from resident NPS and NPS DLP earns a master's degree focused on preparation for assignment as a contingency contracting officer. If a Marine does not attend NPS in any capacity, the Marine Corps could send them to DAU to receive their initial contracting education. Upon completion of NPS or DAU, the Marine will receive a secondary MOS of 3006. The secondary MOS will stay with them for the rest of their military career and while they are assigned to a contracting billet during their utilization, they will be a part of the acquisition workforce. Utilization tours are important because it gives the Marine the opportunity to earn valuable contracting experience.

In conjunction with the Marine's primary monitor, the contracting occupational field sponsor will assign the newly educated Marine to his/her new contracting billet to start their utilization tour. Usually, the Marine will execute a thirty-six month utilization tour as a contracting officer and is not required to stay in the MOS after executing the initial contracting tour. After the initial contracting tour the officer will return to their primary MOS to stay competitive for future promotions and/or command opportunities. They also are not mandated to return to the contracting officer MOS for the rest of their military career.

E. COST-BENEFIT ANALYSIS RESOURCES

Numerous resources were used to determine the right methodology to conduct an analysis of the costs and benefits associated with the initial contracting technical

education and training for unrestricted Marine officers who are entering the contracting career field for the first time. Academic textbooks and other scholastic reports were several of the resources reviewed. A CBA can be very useful in helping a decision maker make a decision. According to one of the textbooks reviewed, the most important features of a CBA is to “include a systematic catalogue of impacts as benefits (pros) and costs (cons), valuing dollars and then determining the net benefits of the proposal relative to the status quo (net benefits equal benefits minus costs)” (Boardman, Greenberg, Vining, & Weimer, 2011, p. 1-2). Details of the CBA presented in this thesis will follow this type of approach.

A review of additional academic reports provided information on how other CBAs have been used to evaluate DOD related programs and projects. As mentioned in the preceding chapter, a 2015 NPS MBA Professional Report, *Army Initial Acquisition Training: An Analysis of Costs and Benefits* by Booker, Miner, and Montano provided an excellent starting point to conduct my analysis on how the Marine Corps educates and trains its new Marine contracting officers. Although the United States Army’s manpower and organizational structure is different from the Marine Corps, their CBA identified that both services use multiple courses of action to prepare their new contracting officers to face the demanding complexities related to the defense acquisition system.

Another key academic report that shape my thoughts on the importance of conducting this CBA was a December 2000 thesis by Eric Corcoran titled, *Developing and Structuring a Permanent Contracting Command in the United States Marine Corps to Maximize the Training, Education and Potential of Military Contracting Officers in order to be Better Prepared to Support the Operational Forces and Lead the Marine Corps Through the 21st Century*. Although Corcoran’s thesis focused on how the Marine Corps could create a permanent contracting command structure similar to the United States Army and Air Force, one of the key ingredients in establishing such a structure is experienced Marine contracting officers. Currently, the Marine Corps has a small cadre of Marine contracting officer who has done multiple tours in contracting. The following cost-benefit analysis will be used to determine the best model the Marine Corps could use to increase the rate in which Marines will have the opportunity to execute at least a

second contracting tour and/or lateral move into contracting as a primary military occupational specialty.

F. CHAPTER SUMMARY

This chapter examined the different changes that have occurred within the acquisition system used by contracting professionals. The changes have impacted the sources used by the Marine Corps to educate new selected contracting officers. These multiple sources have been very instrumental in preparing Marines to execute their contracting responsibilities when they are assigned to a contracting billet during their utilization tour. This chapter provided background information essential to understanding the material that will be presented in the proceeding cost-benefit analysis.

III. COURSES OF ACTION

This chapter will outline the three courses of action the Marine Corps has used to educate and train new Marine contracting officers. The Marine Corps is currently using or has used each COA analyzed in this thesis. All three COAs analyzed in this thesis gives the Marine the opportunity to continue to be competitive for future promotions and assignment to billets of increased responsibilities. Each COA will allow the Marine to obtain an advance degree, complete professional military education (PME) depending on the Marine's rank, and DAWIA Level III contracting education required for career field certification. Based on the model presented by Curtis Booker, Keith Miner, and Stephanie Montano in their 2015 NPS MBA Professional Report, I will present the low, typical, and high cost estimates for the COAs analyzed. My CBA however will only focus on cost and benefits that are related to the Marine Corps. Figure 1 provides an overview of the time required to achieve all the elements of each COA.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total Months
COA 1	NPS DLP					36
	PME					
	Utilization Tour (ADSO)					
COA 2	Resident NPS		Utilization Tour (ADSO)			54
	PME					
COA 3	CCOC	Utilization Tour (ADSO)			40	
		PME				
		MBA w/Tuition Assistance				

Figure 1. Timeline per COA

A. COA 1: EARNING A MASTER'S DEGREE THROUGH NPS DLP, DAWIA CONTRACTING LEVEL III EQUIVALENCY, AND PME QUALIFICATION

This COA gives the officer the opportunity to earn a master's degree, professional military education depending on current rank, and complete DAU course equivalencies for DAWIA Contracting Level III education while enrolled in the NPS Distance Learning

Program. This COA will also give the officer an opportunity to conduct on-the-job training (OJT) at the local Marine Corps Regional Contracting Office (RCO) while earning a master's degree.

The officer earns a master's degree by completing a defense focused twenty-four month curriculum specifically pertaining to the critical Marine Corps need for more contracting officers. The officer will also take PME courses offered by the local Marine Corps University Distance Education Program Office to earn PME qualifications for his or her current rank. Completing DAU equivalent courses associated with the NPS curriculum number 835, Master of Science in Contract Management, allows the officer to achieve DAWIA Contracting Level III education.

Typically, Marine company grade officers, captains or captain selects, are screened and selected to attend a special education program on their first or second tour. As a result, the low cost estimate will be related to a Marine captain with at least six years but no more than eight years of active duty service while he/she is participating in a NPS Distance Learning Program for 24 months. I will assume that the Marine captain does not have dependents for the low cost estimate, however it would be unrealistic to assume that a Marine captain does not have dependents at this juncture of his/her career. As a result, computing the typical cost will be the same as the low cost estimate but it will assume that the officer has dependents.

The high cost estimate is related to field grade officers, specifically majors. On average, it would take a Marine 10 to 12 years to obtain the rank of major. Also, it is uncommon for majors to not have at least one dependent at this point of his/her career. As a result, the high cost estimate will be related to majors with at least 12 years but no more than 14 years of active duty service with dependents while participating in a NPS Distance Learning Program for 24 months.

B. COA 2: EARNING A MASTER'S DEGREE, PME QUALIFICATION, AND DAWIA CONTRACTING LEVEL III EQUIVALENCY WHILE ATTENDING RESIDENT NPS

This COA gives the officer the opportunity to earn a master's degree, professional military education depending on current rank, and complete DAU course equivalencies for DAWIA Contracting Level III technical training and education while attending the NPS main campus in Monterey, California. Although the officer will earn a master's degree, under this COA OJT is not available while attending NPS. For this COA, the officer will have access to all the educational services offered by the NPS campus for a minimum of 18 months. The Marine officer will study under the NPS curriculum number 815, Master of Business Administration with a concentration in Acquisition and Contract Management, under this COA.

The officer will also take PME courses offered by the on-campus Naval War College Distance Education Program or the Marine Corps University Distance Education Program Office to earn PME qualifications for his or her current rank. Completing DAU equivalent courses associated with the NPS curriculum number 815, Master of Business Administration with a concentration in Acquisition and Contract Management, allows the officer to achieve DAWIA Contracting Level III education.

Similarly to COA 1, typically Marine company grade officers, captains or captain selects, are screened and selected to attend a special education program on their first or second tour. As a result, the low cost estimate will be related to a Marine captain with at least six years but no more than eight years of active duty service while he/she is attending NPS for 18 months. I will assume that the Marine captain does not have dependents for the low cost estimate, however it would be unrealistic to assume that a Marine captain does not have dependents at this juncture of his/her career. As a result, computing the typical cost will be the same as the low cost estimate but it will assume that the officer has dependents.

The high cost estimate is related to field grade officers, specifically majors. On average, it would take a Marine 10 to 12 years to obtain the rank of major. Also, it is uncommon for a major to not have at least one dependent at this point of his/her career.

As a result, the high cost estimate will be related to majors with at least 12 years but no more than 14 years of active duty service with dependents while attending NPS's main campus in Monterey, California, for 18 months.

C. COA 3: EARNING A MASTER'S DEGREE FROM AN ACCREDITED CIVILIAN EDUCATIONAL INSTITUTION, PME QUALIFICATION, AND DAWIA CONTRACTING LEVEL III EDUCATION WHILE ATTENDING CCOC

This COA gives the officer the opportunity to earn a master's degree from an accredited civilian education institution, professional military education depending on current rank, and DAWIA Contracting Level III education while attending the USMC Contingency Contracting Officer Course located at the Marine Corps Service Support School (MCSSS) in Camp Johnson, North Carolina. The officer will use the military tuition assistance (TA) program and personal funds to attend an accredited institution either on-line or at the local Base Education Center if the school is available. The military tuition assistance program: "pays 100 percent of tuition and fees not to exceed: \$250 per semester credit hour, \$166 per quarter credit hour, and \$4,500 per fiscal year" (Military Tuition Assistance, n. d.). If tuition cost exceeds the TA limitations the officer will need to use personal funds to cover the difference. Similar to COA 1, this COA will give the officer an opportunity to conduct OJT at the local Marine Corps RCO while earning a master's degree after completing the CCOC. Under this COA, one of the key assumptions is that the Marine Corps will bring back the CCOC or a similar type course to MCSSS or anywhere within the Marine Corps.

The officer earns a master's degree by completing a curriculum specifically pertaining to the critical military need for more contracting officers. For the purpose of this research, the degree will be related to business or a management course of study. The officer will also take PME courses offered by the local Marine Corps University Distance Education Program Office to earn PME qualifications for his or her current rank. Unlike COA 1 and 2, DAU course equivalencies are not required under this COA because the Contracting Level III technical education is completed when taking the actual DAU courses while attending the USMC CCOC at Camp Johnson.

Under this COA, the low cost estimate will be related to a Marine captain with at least six years but no more than eight years of active duty service executing a permanent change of station move to MCSSS at Camp Johnson to attend the CCOC for approximately four months or 120 days. I will assume that the Marine captain does not have dependents for the low cost estimate, however it would be unrealistic to assume that a Marine captain does not have dependents at this juncture of his/her career. As a result, computing the typical cost will be the same as the low cost estimate but it will assume that the officer has dependents.

The high cost estimate is related to field grade officers, specifically majors. On average, it would take a Marine 10 to 12 years to obtain the rank of major. Also, it is uncommon for majors to not have at least one dependent at this point of his/her career. As a result, the high cost estimate will be related to majors with at least 12 years but no more than 14 years of active duty service with dependents while attending the CCOC for approximately four months or 120 days.

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IV. COST ANALYSIS

The identification of the quantifiable cost for each COA in order to facilitate the analysis is illustrated in this chapter of the thesis. Except where indicated, the estimated value of each COA will be based on 2016 cost data. For an example, the compensation element of each COA involves using 2016 military pay charts/tables. The sub sections of this chapter will identify how each cost element for the COAs were analyzed and calculated. Figure 2 displays the total low, typical, and high cost estimates for each COA.

Graduate School Tuition Temporary Assigned Duty (TAD) Expense PME Seminar Cost Compensation Total	COA 1 - NPS DLP, PME, Contracting Level III Equivalency		
	Low	Typical	High
	\$32,000.00	\$32,000.00	\$32,000.00
	\$0.00	\$0.00	\$0.00
	\$15,000.00	\$15,000.00	\$15,000.00
	\$168,511.92	\$170,959.92	\$214,203.12
	\$215,511.92	\$217,959.92	\$261,203.12
Graduate School Tuition Temporary Assigned Duty (TAD) Expense PME Seminar Cost Compensation Total	COA 2 - NPS, PME, Contracting Level III Equivalency		
	Low	Typical	High
	\$29,550.00	\$29,550.00	\$29,550.00
	\$0.00	\$0.00	\$0.00
	\$15,000.00	\$15,000.00	\$15,000.00
	\$151,439.94	\$158,567.94	\$188,840.34
	\$195,989.94	\$203,117.94	\$233,390.34
Graduate School Tuition Temporary Assigned Duty (TAD) Expense PME Seminar Cost Compensation Total	COA 3 - Civilian Graduate School, PME, Contracting Level III Education		
	Low	Typical	High
	\$12,675.00	\$18,737.00	\$27,048.00
	\$26,285.76	\$26,285.76	\$26,285.76
	\$15,000.00	\$15,000.00	\$15,000.00
	\$28,085.32	\$28,493.32	\$35,700.52
	\$82,046.08	\$88,516.08	\$104,034.28

Figure 2. Cost Estimates for Each COA

A. GRADUATE SCHOOL TUITION

The route in obtaining an advance degree is different for each COA. For COA 1, the NPS DLP tuition cost is \$4,000 per quarter (NPS President, School of Business & Public Policy, MSCM Distance Learning Program Tuition letter, October 1, 2015). The NPS DLP curriculum number 835, Master of Science in Contract Management, is an eight quarter program. As a result, the total tuition cost for graduate school for COA 1 is \$32,000 per Marine. In COA 2, the tuition cost will slightly increase to \$4,925 per quarter at the NPS main campus (Route, 2014). The resident NPS curriculum number 815, Master of Business Administration with a focus in Acquisition and Contract Management, is a six quarter program. As a result, the total tuition cost for graduate school for COA 2 is \$29,550 per Marine.

Unlike COA 1 and COA 2, graduate school in COA 3 will be paid for with tuition assistance (TA) and the Marines' personal funds when the Marine attends an accredited institution either on-line or at the local Base Education Center if a graduate school is available. According to a fiscal year 2014 Military Times article, the three top schools used by Marines with TA are American Public University (APU), University of Maryland University College (UMUC), and Ashford University (Military Times, n.d.). After analyzing the top three schools used with TA, tuition cost at American Public University was the least expensive and it was the basis of the low cost estimate. American Public University's MBA tuition cost is \$325 per credit hour and to earn a MBA the student is required to take at least 39 total credit hours (American Public University, 2016a) and (American Public University, 2016b). As a result, the low cost in COA 3 is \$12,675.

The typical graduate school tuition cost under COA 3 was determined by calculating the average tuition cost to earn a MBA from the three aforementioned universities, which was computed as \$18,737. Ashford University carried the most expensive tuition cost when compared to the other two schools of the top three schools used with TA. Ashford University was the basis for calculating the high cost estimate. Ashford University's MBA tuition cost is \$644 per credit hour and to earn a MBA the student is required to take at least 42 total credit hours (Ashford University, 2016a) and

(Ashford University, 2016b). As a result, the high tuition cost estimate in COA 3 is \$27,048. Figure 3 displays the total tuition cost calculations for each COA.

COA 1 - NPS DLP, PME, Contracting Level III Equivalency		
Low	Typical	High
8 quarters @ \$4,000 per quarter = \$32,000	8 quarters @ \$4,000 per quarter = \$32,000	8 quarters @ \$4,000 per quarter = \$32,000
COA 2 - NPS, PME, Contracting Level III Equivalency		
Low	Typical	High
6 quarters @ \$4,925 per quarter = \$29,550	6 quarters @ \$4,925 per quarter = \$29,550	6 quarters @ \$4,925 per quarter = \$29,550
COA 3 - Civilian Graduate School, PME, Contracting Level III Education		
Low	Typical	High
American Public University (APU) – MBA (\$325 per credit @ 39 required credits) = \$12,675	Average of Top 3 Used Schools with TA (American Public University, University of Maryland University College, and Ashford University) = \$18,737	Ashford University – MBA (\$644 per credit @ 42 required credits) = \$27,048

Figure 3. Tuition Cost Calculations for Each COA

B. TEMPORARY ASSIGNED DUTY EXPENSE

Temporary assigned duty (TAD) expenses were computed to cover travel mileage, meals, and lodging expenses for instructors from DAU to teach the required courses to receive Contracting Level III technical education at the Contingency Contracting Officer Course at Camp Johnson under COA 3. It was assumed that each instructor and student would use his or her privately owned vehicle (POV) for transportation; as a result, rental car costs are irrelevant. TAD expenses for students will be allowed if they are traveling fifty miles or greater from their permanently assigned duty station. Under this COA, it is assumed that the Marines will execute a PCA/PCS

move to Camp Johnson within the fifty-mile radius; as a result, the TAD expenses are not associated with the Marine officer students. Temporary assigned duty expenses do not exist under COAs 1 and 2 because the Marine officers are receiving DAU equivalencies for their education from NPS DLP and resident NPS, respectively.

Defense Acquisition University would provide two instructors for the duration of CCOC at Camp Johnson. For this thesis I will assume that the instructors will travel from the nearest DAU regional campus that supports the Camp Johnson, North Carolina area. According to the DAU website, the campus that supports this area is the Mid-Atlantic Region campus in California, Maryland. The total distance to travel to Camp Johnson and back to California, Maryland, after the completion of the course is 672 miles. According to the current POV mileage rates and allowances in the Defense Travel Management Guide, instructors will receive \$0.54 for every mile traveled from California, Maryland, to Camp Johnson (DTMO, 2016). As a result, total cost of travel for the two instructors is \$362.88 each, which equals to \$725.76 total travel cost for the two instructors under COA 3.

Per Diem rates for the two instructors from DAU will include lodging plus meals and incidental expenses (M&IE) while they are in Camp Johnson assigned to CCOC. The flat rate per diem policy will be used to determine the lodging and M&IE expense for the two instructors. The Flat Rate Per Diem policy is effective for all travel over 30 days to one location that began, or amendments issued, on or after November 1, 2014 (Flat Rate Per Diem In The Continental United States For Long Term TDY, 2017). The following flat rate per diem rates are to be used for long term TDY/TAD: when TDY/TAD length is 31 to 180 days at the same location, use the 75% rate and when TDY/TAD length is over 180 days use the 55% rate (Flat Rate Per Diem In The Continental United States For Long Term TDY, 2017). The flat rate applies beginning the day after the traveler arrives at the flat rate Per Diem location. In accordance with the current per diem rates policy, after arriving to Camp Johnson, each instructor will be authorized to receive \$68.25 for lodging plus \$38.25 for M&IE, which equals to \$106.50 per day per instructor. Figure 4 provide details for the TAD cost calculations for COA 3.

COA 1 - NPS DLP, PME, Contracting Level III Equivalency		
Low	Typical	High
No TAD Costs Under This COA		
COA 2 - NPS, PME, Contracting Level III Equivalency		
Low	Typical	High
No TAD Costs Under This COA		
COA 3 - Civilian Graduate School, PME, Contracting Level III Education		
Low	Typical	High
2 instructors for the course, travel from Mid-Atlantic Region Location, which is located in California, Maryland to Camp Johnson. Travel Cost = 336 miles @ .54 = \$181.44 (one way) \$362.88 (both ways) = \$362.88 x 2 = \$725.76 total travel cost for instructors. Per Diem rate for Camp Johnson includes lodging (\$68.25) plus meals and incidental expenses (M&IE) (\$38.25) = [\$68.25 + \$38.25 = \$106.50] per day per instructor. CCOC on average is 120 days or 4 months. Travel = \$725.76 Per Diem = \$106.50 x 120 days = \$12,780 x 2 = \$25,560 Total TAD Cost: \$725.76 + \$25,560 = \$26,285.76		

Figure 4. TAD Cost Calculations for COA 3

C. PME SEMINAR COST

Professional military education is required for officers to stay competitive for promotion and other career enhancing opportunities. Across each of the three COAs analyzed in this study, the Marine officer will have the opportunity to earn PME qualification for his/her current rank. For each COA, the officer will be able to attend Expeditionary Warfare School or Marine Corps Command and Staff College through the local Marine Corps College of Distance Education and Training (CDET) Distance Professional Military Education (DPME) program. In COAs 1 and 3, the Marine will utilize the CDET satellite office located in Camp Lejeune, North Carolina; Camp Pendleton, California; or Okinawa, Japan. The location will be based on which Regional Contracting Office the officer will be assigned.

In COA 2, the Marine will utilize instructors from the Marine Corps Air Station Miramar, California office located at the NPS campus. According to the annual CCLEB MARADMN, “company grade officers assigned to the Naval Postgraduate School must enroll in and complete Expeditionary Warfare School Distance Education Program (EWSDEP), unless already PME complete for grade” (USMC, 2015a). Also according to the annual CPIB MARADMIN, “field grade officers assigned to the Naval Postgraduate School must in enroll in Command Staff College Distance Education Program (CSCDEP) or complete the series of four Naval War College (NWC) classes at NPS to receive Command and Staff PME equivalency” (USMC, 2015b).

To determine the cost for providing the required PME opportunities for the Marine officers, a contract issued by Marine Corps System Command with an effective date of May 31, 2013, was analyzed. According to the contract, the direct cost for the instructors only, to provide the PME seminar services at the above locations will be used to determine the cost. Other administrative overhead and variable cost associated with the delivery of the seminars were not considered. In COA 1 and 3, the seminars will be delivered in a two-year program. In COA 2 at NPS, the seminar will be delivered in a sixteen month time period. According to the contract, program seminar services cost \$7,500 each year for EWSDEP and the same for CSCDEP. Although COA 2 seminar length is smaller than COAs 1 and 3, it carries the same cost. The total cost for the seminars under all COAs in this thesis is \$15,000.

D. COMPENSATION

Across all COAs analyzed in this thesis, the Marine Corps incurs compensation cost to send the Marine officers to special education programs. The compensation costs will be related to basic pay and other entitlements Marines receive while they are attending their special education program. It will be used to calculate the compensation cost charged to the Marine Corps. Similar to the source used by Booker, Miner, and Montano (2015), certain elements of the November 2012 Congressional Budget Office report will be used to build the cost relationships required to calculate this important cost.

According to the aforementioned November 2012 Congressional Budget Office report on the *Costs of Military Pay and Benefits in the Defense Budget*, compensation consists of four major areas:

- (1) Current cash compensation for service members, consisting of basic pay, food and housing allowances, bonuses, and various types of special pay;
- (2) Accrual payments that account for the future cash compensation of current service members in the form of pensions for those who will retire from the military (generally after at least 20 years of service);
- (3) Accrual payments that account for the future costs of health care for current service members (under a program called TRICARE for Life) who will retire from the military and also become eligible for Medicare (generally at age 65); and
- (4) Funding for current spending under the military health care program (known as TRICARE), excluding the costs of caring for current military retirees who also are eligible for Medicare (the latter costs are covered by the accrual payments made in earlier years, just described). (Congressional Budget Office, 2012)

The Department of Defense makes up a significant part of the nation's budget. Cash compensations that the armed forces receive are tracked by the Department of Defense using a concept entitled "regular military compensation (RMC): basic pay plus allowances for subsistence or food and housing" (Congressional Budget Office, 2012). Compensation calculations in this thesis will be based on the RMC construct. The basic pay component and housing allowance for the COAs in this thesis will vary based on the O-3 (Captain) and O-4 (Major) pay rates depending on years of service. The housing allowances entitlement received by the service member will also depend on the location and whether the Marine has dependents. Subsistence or food allowances are held constant across the COAs because it is paid on a monthly rate for officers regardless of rank or years of service.

In COA 1, compensation costs for the low cost estimate will be related to a Marine captain with six years of active duty service but less than eight years without dependents attending a NPS Distance Learning Program for 24 months at the Regional Contracting Office (RCO) in Camp Lejeune, North Carolina. The low compensation cost

estimate is \$168,511.92. Although the officer could be assigned to any RCO, the Camp Lejeune RCO was used because it carries the least BAH rate among the three RCOs used in this thesis. The only difference between the low and typical cost estimate is that the typical cost estimate includes the assumption the Marine has dependents. The typical compensation cost estimate is \$170,959.92. The high cost estimate is related to a Marine major with 12 years of active duty service but less than 14 years and has dependents while participating in a NPS Distance Learning Program for 24 months. The high cost compensation estimate in COA 1 is \$214,203.12.

In COA 2, compensation costs for the low cost estimate will be related to a Marine captain with at least six years but no more than eight years of active duty service without dependents for a minimum of 18 months while attending NPS. The low compensation cost estimate is \$151,439.94. The only difference between the low and typical cost estimate is that the typical cost estimate includes the assumption the Marine captain has dependents. The typical compensation cost estimate is \$158,567.94. The high cost estimate is related to a Marine major with 12 years of active duty service but less than 14 years and has dependents while attending the main campus of NPS for 18 months. The high compensation cost estimate in COA 2 is \$188,840.34.

In COA 3, a key assumption is that the student officers will not be in a TAD status and as a result, will not receive Per Diem. Instead, compensation calculations under this COA will be similar to COAs 1 and 2: basic pay, basic allowances for subsistence (food) plus basic housing allowances. Compensation costs for the low cost estimate will be related to a Marine captain with six years of active duty service but less than eight years without dependents at Camp Johnson, North Carolina to attend the CCOC for approximately four months or 120 days. The low compensation cost estimate is \$28,058.32. The only difference between the low and typical cost estimate is that the typical cost estimate includes the assumption the Marine captain has dependents. The typical compensation cost estimate is \$28,493.32. The high cost estimate is related to a Marine major with 12 years of active duty service but less than 14 years and has dependents while attending the CCOC for approximately four months or 120 days. The

high compensation cost estimate for COA 3 is \$35,700.52. Figure 5 outlines the details for the compensation calculations.

COA 1 - NPS DLP, PME, Contracting Level III Equivalency		
Low	Typical	High
• BAH = O-3 rate without dependents (\$1,227) for the geographical area of Camp Lejeune, North Carolina. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 24 \text{ months} = (\$1,227 + \$253.63 + \$5,540.70) * 24 = \mathbf{\$168,511.92}$	• BAH = O-3 rate with dependents (\$1,329) for the geographical area of Camp Lejeune, North Carolina. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 24 \text{ months} = (\$1,329 + \$253.63 + \$5,540.70) * 24 = \mathbf{\$170,959.92}$	• BAH = O-4 rate with dependents (\$1,590) for the geographical area of Camp Lejeune, North Carolina. • BAS = \$253.63 • Basic Pay = O4 (\$7,081.50 per month) $(BAH + BAS + \text{Basic Pay}) * 24 \text{ months} = (\$1,590 + \$253.63 + \$7,081.50) * 24 = \mathbf{\$214,203.12}$
COA 2 - NPS, PME, Contracting Level III Equivalency		
Low	Typical	High
• BAH = O-3 rate without dependents (\$2,619) for the geographical area of Monterey, California. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 18 \text{ months} = (\$2,619 + \$253.63 + \$5,540.70) * 18 = \mathbf{\$151,439.94}$	• BAH = O-3 rate with dependents (\$3,015) for the geographical area of Monterey, California. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 18 \text{ months} = (\$3,015 + \$253.63 + \$5,540.70) * 18 = \mathbf{\$158,567.94}$	• BAH = O-4 rate with dependents (\$3,156) for the geographical area of Monterey, California. • BAS = \$253.63 • Basic Pay = O4 (\$7,081.50 per month) $(BAH + BAS + \text{Basic Pay}) * 18 \text{ months} = (\$3,156 + \$253.63 + \$7,081.50) * 18 = \mathbf{\$188,840.34}$
COA 3 - Civilian Graduate School, PME, Contracting Level III Education		
Low	Typical	High
• BAH = O-3 rate without dependents (\$1,227) for the geographical area of Camp Johnson, North Carolina. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 4 \text{ months} = (\$1,227 + \$253.63 + \$5,540.70) * 4 = \mathbf{\$28,085.32}$	• BAH = O-3 rate with dependents (\$1,329) for the geographical area of Camp Johnson, North Carolina. • BAS = \$253.63 • Basic Pay = O3 (\$5,540.70 per month) $(BAH + BAS + \text{Basic Pay}) * 4 \text{ months} = (\$1,329 + \$253.63 + \$5,540.70) * 4 = \mathbf{\$28,493.32}$	• BAH = O-4 rate with dependents (\$1,590) for the geographical area of Camp Johnson, North Carolina. • BAS = \$253.63 • Basic Pay = O4 (\$7,081.50 per month) $(BAH + BAS + \text{Basic Pay}) * 4 \text{ months} = (\$1,590 + \$253.63 + \$7,081.50) * 4 = \mathbf{\$35,700.52}$

Figure 5. Compensation Calculations for Each COA

E. CHAPTER SUMMARY

Presented at the start of this chapter was an overall identification of the quantifiable cost for each COA. That was followed by a more detailed look into each cost element for each COA. Each sub section of the chapter illustrated how each cost element for the COAs were analyzed and calculated. The total tangible cost symbolizes the dollar value for each COA. The next chapter of this thesis will begin to focus on the benefits that are associated with the initial training and education for new Marine contracting officers.

V. BENEFIT ANALYSIS

This chapter will focus on determining the benefits associated with each COA in terms of number of graduate school credit hours, differences in the graduate school experience, Defense Acquisition University courses, and the return on investment. The individual Marine experiences some benefits and the institution of the Marine Corps receives some. It may be difficult to determine the dollar value of all the benefits analyzed in this CBA, however wherever it is possible benefits identified under each COA will have an associated dollar value in order to compare differences between each COA. In situations where it is not possible to determine the dollar value of the benefit, I will proceed in describing the benefit in narrative form to give the reader the information needed to make his or her conclusions when comparing the different COAs' overall benefit value.

A. GRADUATE SCHOOL CREDIT HOURS

In each COA, the Marine officer will have the opportunity to earn a master's degree. However, the total number of graduate school credit hours required to earn a master's degree are different for each COA. For an example, COA 2 entails taking the most credit hours when compared to the other two COAs because resident students at NPS covers many topics beyond their master's degree major. The value placed on numbers of graduate school credit hours will depend on how they are viewed by the student and the Marine Corps. An individual may believe that the more credits taken, the higher the benefit received from studying under that curriculum because of the breadth of learning. Conversely, another may think that the fewest required credit hours taken would result in a higher benefit received because the student will have more time to focus on studying and understanding the more narrowly selected courses taken under that particular curriculum.

The Marine Corps may look at the number of required credit hours taken by the Marine a little different. In COAs 1 and 2, the Marine Corps is able to provide input and shape the defense-focused curriculums of the NPS DLP and resident NPS. Mainly

because NPS supports the need of the Navy and DOD. If the Marine Corps desire to change what the Marine officers are studying, it will be able to make or recommend the necessary changes. Such latitude and authority is not present under COA 3. In COA 3, the Marine Corps does not have any input or control over what type of classes the Marine officer is taking in graduate school. Also, the Marine Corps doesn't have any control of if the Marine completes his or her MBA because the Marine is going to graduate school under the tuition assistance program. As a result, the Marine Corps will receive the greatest benefit under COAs 1 and 2 because it has more input and control over the number credits hours taken by the Marine officer.

In COA 1 the Marine officer will study under the NPS DLP curriculum number 835 and take on average 41 required graduate credits to earn a Master of Science in Contract Management degree. In COA 2 the Marine officer will study under NPS curriculum 815 and take on average 76 required graduate credits to earn a Master of Business Administration in Acquisition and Contract Management degree. In COA 3, it is assumed that the Marine officer will study at one of the civilian educational institutions analyzed in this thesis. After taking the average of the required credit hours for the three universities, on average it would require 39 graduate credits to earn a Master of Business Administration degree.

B. GRADUATE SCHOOL EXPERIENCE

The graduate education experience is different for each COA. As a result, the value placed on the graduate education may be different for each COA. For COA 1, the NPS DLP curriculum number 835, Master of Science in Contract Management, is an eight-quarter program. The Marine officer will take courses according to the curriculum's class schedule, while at the same time working in the contracting career field at his or her permanent duty station. The NPS DLP will take approximately the equivalent of two full calendar years to complete. Under this COA, the officer will be earning a master's degree that is closely related to his or her job. Studying and being able to apply what is learned during on-the-job training could be seen as a very valuable benefit for this COA.

Under COA 1, after being selected to participate in the NPS DLP, in the first two years of the required three-year utilization tour the officer will take on-line classes while

working in a contracting job at his or her permanent duty station. Distance learning education can be very valuable for working adults, especially for busy service members. The NPS DLP offers a defense-focused curriculum, which can be tailored to accommodate the desires of the Marine Corps. Also, each Marine officer will take specialized courses that will give him or her equivalency credit for DAU courses. These credits are very important because they are required to apply for and receive contracting career field certifications.

In COA 2, the student will have a graduate education experience similar to their undergraduate experience if they were a traditional college student. The resident NPS experience is very different from COAs 1 and 3. The officer will have access to all the educational services offered by the NPS campus for a minimum of 18 months. Graduate school at NPS will be the Marine's job during this eighteen-month journey. Under COA 2, the Marine will also earn DAU course equivalencies for DAWIA Contracting Level III technical training and education while attending NPS main campus in Monterey, California. The Marine officer will study under the NPS curriculum number 815, Master of Business Administration with a concentration in Acquisition and Contract Management, under this COA. Although the officer will earn a master's degree, under this COA on-the-job training is not available while attending NPS.

The graduate school experience in COA 3 is similar to the experience in COA 1. However, the Marine officer will have to attend graduate school at night located at the local base education center or online using tuition assistance and personal funds, if he or she exceeds the tuition assistance fiscal year limitations. COA 3 gives the officer the opportunity to earn a master's degree from an accredited civilian education institution and DAWIA Contracting Level III education while attending the United States Marine Corps (USMC) Contingency Contracting Officer Course (CCOC) located at the Marine Corps Service Support School (MCSSS) in Camp Johnson, North Carolina. Unlike COA 1 and 2, DAU course equivalencies are not required under this COA because the Contracting Level III technical education is completed when taking the actual DAU courses while attending the USMC CCOC at Camp Johnson.

To determine the differences in the value of the education received from the Naval Postgraduate School's education opportunities under COA 1 and 2, it will be important to consider the differences in how that student's studies are conducted under the two different COAs. Under COA 1, the graduate education is received via an on-line experience when the student is not completing tasks related to his or her contracting job at the Regional Contracting Office. The distance-learning program will require the student to juggle the demands of graduate school and job performance. This could potentially have a negative impact on the student's education experience. On the other hand, this type of education option could be valuable to Marine officers who are not selected to attend the resident NPS MBA program.

Under COA 2, the Marine officer will be a full time student at NPS in Monterey, California. The student will not have competing work requirements to deal with while enrolled at NPS. Like COA 1, the education received from NPS by resident students will be defense-focused and geared towards preparing the officer for being an effective military contracting officer after graduation. Unlike COA 1, the student will be among a diverse student body that includes service members from the other services within the Department of Defense, United States Coast Guardsmen from the Department of Homeland Security, international officers, and civilians. This type of exposure could be very valuable because it presents networking opportunities and it could increase information and knowledge sharing received by the students during their eighteen-month enrollment at NPS. The NPS campus also offers educational assistance services that could be added to the value of the education received from resident or DL courses from NPS. For an example, services offered by the Graduate Writing Center and the on campus Dudley Knox Library enhances the level of education received by NPS students.

The education experience under COA 3 is similar to COA 1 but it will be at a civilian educational institution. A civilian online or distance learning MBA program can be valuable for the student because he or she may be able to attend a well-known or highly ranked business school. This could increase the market value and creditability of the officer when he or she leaves the military. The Marine Corps may not value this education COA because the Marine Corps does not have any influence over what the

Marine will study at the civilian-run institution. In the DOD operated educational institution of NPS, it provides the defense-focused education the Marine Corps seeks to help prepare its officers for future challenging contracting officers billets throughout the Marine Corps. Moreover, the Marine Corps may reap a higher benefit for sending Marines to NPS because the return on investment is greater than a Marine receiving a MBA from a civilian institution. The active duty service obligation for Marines who graduates from NPS is a minimum of three years; however, the active duty service obligations for graduates of civilian intuitions when using tuition assistance is two years.

C. DEFENSE ACQUISITION UNIVERSITY COURSES

The Defense Acquisition Workforce Improvement Act and the Acquisition Career Development Program enforces and tracks the acquisition workforce career path requirements for acquisition professionals. Individuals must adhere to certain standards to obtain career field certifications. In COA 1 and 2, Marine officers will earn DAU course equivalencies for the courses required to earn DAWIA Contracting Level III education, which could lead to career field certifications. The Defense Acquisitions University was established to provide acquisition training and education to DOD service members and other federal employees. It is the preferred method to train and educate acquisitions professionals within the DOD and the federal government.

In COA 3, the officer will earn DAWIA Contracting Level III technical training while attending the USMC Contingency Contracting Officer Course located at the Marine Corps Service Support School in Camp Johnson, North Carolina. Unlike COA 1 and 2, DAU course equivalencies are not required under COA 3 because the Contracting Level III technical education is completed when taking the actual DAU courses while attending the USMC CCOC at Camp Johnson. One could come to the conclusion that taking the authentic DAU courses at the CCOC instead of taking courses through NPS for DAU equivalency would result in providing a higher overall benefit for the individual Marines and the Marine Corps.

D. RETURN ON INVESTMENT

The biggest and most valuable benefit received by the Marine Corps is the active duty serve obligation each Marine must agree to before participating in the graduate school or special education programs in all three COAs. For all three COAs, the officer must serve at least three years after selection into the program or after completing the education provided in the program. In COAs 2 and 3, the three-year utilization tour will commence after the officer has completed the resident NPS or the CCOC, respectively. Also in COA 3, the required two-year active duty service obligation will start after the officer completes his or her graduate degree from the civilian educational institution. In COA 1, the Marine's three-year utilization tour will run concurrently with the two-year NPS DLP associated with curriculum number 835, Master of Science in Contract Management (USMC, 2013).

The active duty service obligation time is considered to be the most value benefit because it allows the Marine Corps to keep a valuable educated and trained asset in the Marine Corps for an extended period of time to do a specific occupational specialty that is related to the education received under a particular program. In the case of this thesis, the occupational specialty is contracting. To determine which course of action yields the best rate of return on investment, I will seek to determine which COA represents the least expensive COA per year during the Marine's utilization tour. Similar to Booker, Miner, and Montano (2015), I will use the total typical cost for each COA and divide that amount by the total number of years the Marine officer will execute for his or her utilization tour. For all three COAs, the utilization tour is equal to three years.

In COA 1, the total typical cost was \$217,959.92, which resulted in approximately \$72,653.31 per year of the officer's utilization tour. In COA 2, the total typical cost was \$203,117.94, which resulted in \$67,705.98 per year of the officer's utilization tour. Lastly in COA 3, the total typical cost was \$88,516.08, which resulted in \$29,505.36 per year of the officer's utilization tour. The benefit analysis based on the cost per year of the Marine's utilization tour indicates that COA 3 represents the greatest benefit returned to the Marine Corps because it cost significantly less per year during the Marine's utilization tour.

E. CHAPTER SUMMARY

This chapter determined the benefits associated with each COA in accordance with the number of graduate credits received, evaluating the different graduate school experiences across the different COAs, DAU courses and equivalencies, and the Marine Corps' return on investment during the Marine's utilization tour. Some benefits can be directly linked to the individual Marine and some can be connected to and received by the Marine Corps. When it was difficult to determine the dollar value of the benefits analyzed during this portion of the CBA, I described the benefit in narrative form to give the reader the information needed to make his or her conclusions regarding which COA represented the greatest overall benefit value.

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VI. SENSITIVITY ANALYSIS AND DISCUSSION

Multiple variables and assumptions influenced the cost and benefits analyzed in this cost-benefit analysis. Figure 2 in chapter 4 provides the total low, typical, and high cost estimates for each COA. The variables that were the most influential in determining the differences between the COAs are the cost of graduate school, the compensation received by the Marine while executing the COA, and the time it takes the Marine to complete all of the elements within the COA. Potential changes to how these factors were considered provide the framework for this sensitivity analysis.

In COAs 1 and 2, the tuition cost for NPS DLP and NPS is the same for the low, typical, and high estimates. In COA 3 the tuition cost for the schools chosen for this cost-benefit analysis could have been different. If so, it would have an enormous impact on the tuition cost presented in COA 3. For an example, if the tuition cost for one of the nation's top ranked online MBA schools was used the tuition cost would have been a lot more expensive. This is possible because under COA 3 the Marine chooses the school he or she attends. Unlike COAs 1 and 2, the Marine Corps does not dictate which graduate school the Marine attends or the course of study he or she pursues.

The compensation received by the Marine officer while executing each COA was another cost element that had a lot of variability. The cause of the variability is related to the time required to complete the initial contracting education and training. In COAs 1 and 2, the Marine receives the regular military compensation for 24 months and 18 months, respectively. In COA 3 however, the Marine will only receive the regular military compensation for approximately four months. The difference in the time required to finish the initial contracting education and training in COA 3 resulted in it having a substantially favorable lower compensation cost when compared to the other two COAs.

Finally, the length of time required to complete all the elements of each COA resulted in how each COA was viewed in providing the best overall benefit to the Marine Corps. Although COA 3 represented that second shortest timeline to complete the elements of the COA, it provided the biggest return on the investment of providing the

initial contracting education and training to the officers. Across all three COAs, the compensation received by the Marine officers is the most cost sensitive element.

VII. CONCLUSION

Based on the outcomes of this CBA, I conclude that the most advantageous COA the Marine Corps should use to provide initial contracting technical education and training for unrestricted Marine officers who are entering the contracting career field for the first time is COA 3. COA 3 entails earning a master's degree from an accredited civilian educational institution, PME qualification, and DAWIA contracting level III education while attending CCOC at Camp Johnson, North Carolina. As previously mentioned in chapter 3, the Marine Corps would have to bring the CCOC back to Camp Johnson to execute this COA. Moreover, the Marine Corps should consider using another DAU school/course used by other branches of the armed forces as an alternative source to provide the initial contracting education if it can't bring back the CCOC.

COA 3 represents the least expensive COA and it also presents the greatest benefit returned to the Marine Corps because it cost significantly less per year during the Marine's utilization tour. Although COA 3 represents the best COA for Marine officers to receive initial contracting education and training, I recommend that the Marine Corps use COA 2 as a retention tool because this COA takes the longest time to complete despite being the second most expensive COA. A Marine's selection on the annual Commandant's Professional Intermediate-Level Board or Commandant's Career-Level Education Board to participate in the Marine Corps' Special Education Program and attend resident NPS can be used to retain competitive Marines for an extended amount of time. In COA 2, the Marine will have the opportunity to attend NPS after his or her selection on the annual Commandant's Professional Intermediate-Level Board or Commandant's Career-Level Education Board. As seen in chapter 3, this will allow the Marine Corps to retain the Marine officer for a minimum of 54 months (18 months at NPS and 36 months utilization tour after graduation).

NPS as a retention tool could be critical in developing the Marine Corps contracting career field for career Marine officers. After completing COA 3, the Marine will return to his primary MOS. If the Marine is screened and selected on the annual CCLEB or CPIB when they are scheduled to PCS at the end of their primary MOS tour,

he or she will attend NPS to execute COA 2. If the recommendations provided in this thesis are taken for action, it would guarantee that the Marine Corps will have Marines available to execute multiple contracting tours. Currently the Marine Corps doesn't have this capability.

Executing multiple contracting tours will strengthen the Marine Corps' contracting community. It will also give the Marines the opportunity to receive additional contracting education and experience. This will help prepare Marine officers to assume greater responsibilities and leadership positions within the contracting career field. After the Marines' second contracting tour, the Marine Corps should also consider allowing officers to lateral move into MOS 3006 if he or she wants to do it for the rest of their career. This will help the Marines ascend to the same professional level as their counterparts in the other services within DOD. The Marine Corps' is the only branch of the military that doesn't allow officers to hold the contracting officer MOS as a full-time primarily military occupation specialty. Figure 6 illustrates the proposed contracting career field (MOS 3006) roadmap if the recommendations in this CBA are implemented.

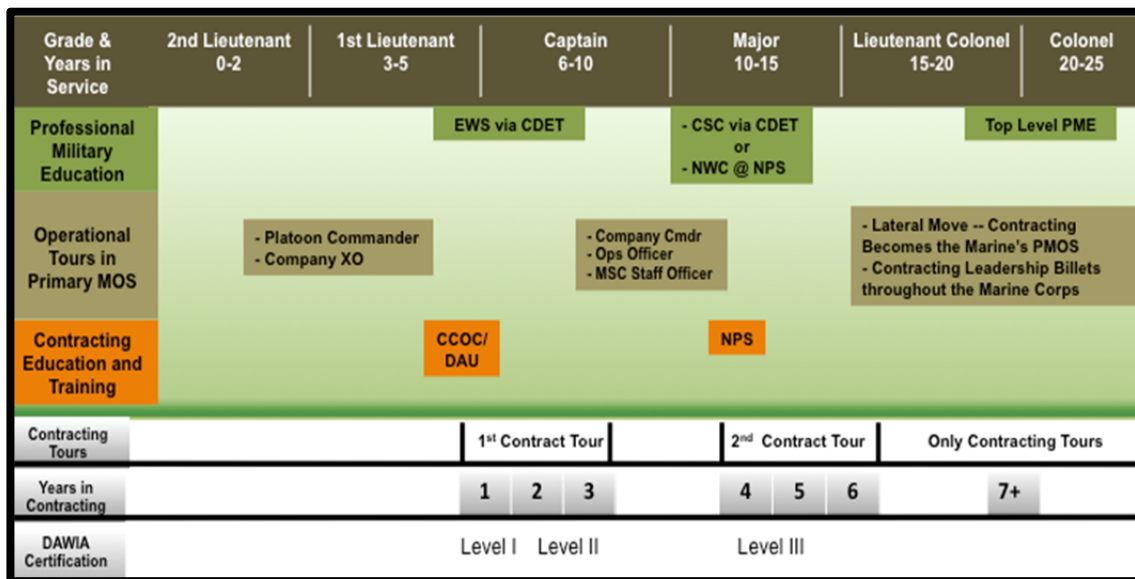


Figure 6. Proposed 3006 MOS Roadmap. Adapted from Kelley (n.d.)

I also recommend that additional analysis and research should be conducted to answer the following tertiary questions:

- What lessons can the Marine Corps learn from other military services in how they educate, retain, and assign their contracting personnel?
- How will the current changes in the Marine Corps Contingency Contracting Force, officers and enlisted personnel, impact future changes for the military occupational specialties 3006, Contracting Officer and 3044, Contracting Specialist?
- After making MOS 3006 a primary MOS for unrestricted Marine officers, how can the Marine Corps create contracting battalions and command equivalent billets for Lieutenant Colonels and Colonels with the PMOS of 3006?

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