



ACQUISITION RESEARCH PROGRAM SPONSORED REPORT SERIES

Uniformed Military Acquisition Officer Career Path Development Comparison

December 2020

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Prepared for the Naval Postgraduate School, Monterey, CA 93943.



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ABSTRACT

The purpose of this research was to compare the career path development of the Navy, Marine Corps, Air Force, and Army Acquisition Officers and identify advantages and disadvantages from each Service. After an analysis of the differences, recommended changes to establish greater efficiency and symmetry within the Acquisition Officer's professional development to serve more effectively in a Joint environment are proposed. The methodology included comparing U.S. Armed Forces processes and frameworks concerning career field education and training of uniformed Acquisition Officers in the contract management and program management fields. Each Service's methods were compared to identify milestones for career progression of Acquisition Officers within each Service. Processes that would benefit other Services were identified, such as serving in non-acquisition positions as a junior officer and serving in back-to-back acquisitions tours once joining the acquisition workforce. These beneficial processes were used to create a Universal Acquisition Officer Career Path (UAOCP) that can be adopted by all Services to better synchronize military and civilian education, training, and experience across the Services for Acquisition Officers. The UAOCP would promote a level field of knowledge that could better serve the Joint acquisition environment.



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LIST OF ACRONYMS AND ABBREVIATIONS

1LT/1stLt	First Lieutenant
2LT/2ndLt	Second Lieutenant
A&S	Acquisition and Sustainment
AAC	Army Acquisition Corps
AAPC	Army Acquisition Professional Course
AC	Acquisition Corps
ACAT	Acquisition Category
ACC	Army Contracting Command
ACE	American Council on Education
ACF	Acquisition Career Field
AEE	Acquisition Entrance Exam
AICC	Army Intermediate Contracting Course
AFFAM	Air Force Fundamentals of Acquisition Management
AFIT	Air Force Institute of Technology
AFOCD	Air Force Officer Classification Directory
AFPC	Air Force Personnel Center
AFSC	Air Force Specialty Code
AL&T	Acquisition, Logistics and Technology
ALCP	Acquisition Leadership Challenging Programs
AT&L	Acquisition, Technology & Logistics
AOC	Army Area of Concentration
APDP	Acquisition Professional Development Program
AQD	Additional Qualification Designation
AQS	Acquisition Qualification Standard
AWF	Acquisition Workforce
BBP	Better Buying Power
BOLC	Basic Officer Leadership Course
BQC	Basic Qualification Course
BtB	Back to Basics



C&S	Command and Staff
CAP	Critical Acquisition Position
CAPT/CPT	Captain
CCC	Captain Career Course
CCLEB	Commandants Career-Level Education Board
CCO	Contingency Contracting Officer
CDR	Commander
CHEK	Continuing Hours of Education and Knowledge
CIVINS	Civilian Institutions
CL	Continuous Learning
CM	Contracting Manager
COL/Col	Colonel
CPIB	Commandants Professional Intermediate-Level Education Board
CRS	Congressional Research Service
CSL	Centralized Selection List
CTETP	Career Field Education and Training Plan
DA	Department of the Army
DAC	Defense Acquisition Corps
DANTE	Defense Activity for Non-Traditional Education Support
DSST	DANTE Subject Standardized Tests
DAU	Defense Acquisition University
DAW	Defense Acquisition Workforce
DAWIA	Defense Acquisitions Workforce Improvement Act
DCMA	Defense Contract Management Agency
DH	Department Head
DIVO	Division Officer
DLA	Defense Logistics Agency
DoAF	Department of Air Force
DoDI	Department of Defense Instruction
DoD	Department of Defense
DoN	Department of Navy



DPM	Deputy Program Manager
ENS	Ensign
EWI	Education with Industry
FA	Functional Area
FAR	Federal Acquisition Regulation
FIPT	Federal Integrated Product Team
GAO	Government Accountability Office
GEV	Graduate Education Voucher
IDE	Intermediate Development Education
IDP	Individual Development Plan
ILE	Intermediate Level Education
IQC	Intermediate Qualification Course
ITP	Individual Training Plan
JPME	Joint Professional Military Education
JQO	Joint Qualified Officer
KLP	Key Leadership Position
KO	Contracting Officer
LT	Lieutenant
LTC/LtCol	Lieutenant Colonel
LCDR	Lieutenant Commander
LTjg	Lieutenant Junior Grade
MAIS	Major Automated Information System
MAJ/Maj	Major
MBA	Master of Business Administration
MCSC	Marine Corps System Command
MDAP	Major Defense Acquisition Program
MEF	Marine Expeditionary Force
MOS	Military Occupational Specialty
MRC	Mission Ready Contracting
MTL	Master Task List
NAVMC	Navy Marine Corps



NAVSUP	Naval Supply Systems Command
NDAA	National Defense Authorization Act
NOOCS	Navy Officer Manpower and Personnel Classifications
NPS	Naval Postgraduate School
NWC	Naval War College
OCC	Office of the Comptroller of the Currency
OJT	On-the-Job Training
OP	Operational
OPNAV	Operational Navy
OSD	Office of the Secretary of Defense
PCC	Pre-Command Course
PCD	Position Category Descriptions
PDE	Primary Development Education
PEO	Program Executive Officer
PM	Program Manager
PME	Professional Military Education
PMOS	Primary Military Occupational Specialties
PMT	Project Management Trainer
PCC	Pre-Command Course
PQS	Personnel Qualification Standard
QUAL	Qualification
RAND	Research and Development
RL	Restricted Line
SAASS	School of Advanced Air and Space Studies
SDE Senior	Development Education
SECDEF	Secretary of Defense
SOS	Squadron Officer School
SSC	Senior Service College
TIG	Time-in-Grade
TWI	Training with Industry
TYCOM	Type Commander



UAOCP	Universal Acquisition Officer Career Path
URL	Unrestricted Line
USAASC	U.S. Army Acquisition Support Center
USACE	United States Army Corps of Engineers
USD	Under Secretary of Defense
USD(A)	Under Secretary of Defense for Acquisition
USD(A&S)	Under Secretary of Defense of Acquisition and Sustainment
USD(AT&L)	Under Secretary of Defense of Acquisition, Technology, and Logistics
USD(R&E)	Under Secretary of Defense for Research and Engineering



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I. INTRODUCTION

Currently, “it is DoD [Department of Defense] policy that the AWF [acquisition workforce] Program support a professional, agile, and high-performing military and civilian AWF that meets uniform eligibility criteria, makes smart business decisions, acts in an ethical manner, and delivers timely and affordable capabilities to the warfighter” (DoD, 2019, p. 5). The DoD Instruction (DoDI) 5000.66 outlines the Defense Acquisition Workforce Education, Training, Experience, and Career Development Program, which originates from the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD[A&S]). It is the responsibility of the OUSD(A&S), among other things, to establish “accession, education, training, and experience requirements for each acquisition position category based on the level of complexity of each category’s duties” (DoD, 2019, p. 6). For the DoD, a position is descriptive of an individual’s job.

According to the Defense Acquisition Workforce Position Category Descriptions (PCD) (2018), there are a total of 15 acquisition position categories. These PCDs provide duty characteristics that are in line with general acquisition-related responsibilities and career path specifics. PCDs also include the Office of the Comptroller of the Currency (OCC) series codes for civilian personnel and a breakdown of DoD component uniformed personnel’s unique Army Area of Concentration (AOC), Navy Additional Qualification Designation (AQD), Air Force Specialty Code (AFSC), and Marine Corps Military Occupational Specialty (MOS). Not every PCD has officers and civilians from each of the DoD components. Of the 15 acquisition position categories, only five have representatives from each component: Test & Evaluation, Science & Technology Management, Information Technology, Program Management, and Contracting. This research focuses on the program management and contract management career fields. Moving forward, program managers (PMs) and contracting officers (also referred to as “KOs”) are referenced as the acquisition workforce, or AWF. This professional project centers on a Joint perspective, where more than one of the military components (Army, Air Force, Navy, and Marine Corps) work together on the same program.



The DoD AWF consists of uniformed acquisition officers and defense civilians employed in multiple areas of expertise. The AWF is “responsible for identifying, developing, buying, and managing goods and services to support” the needs of the DoD (Schwartz et al., 2016, p. i). Defense acquisition is a team effort between the PMs and KOs as they acquire products and provide services on behalf of the warfighter to deliver capabilities at the right time, to the right place, and within established cost goals. The Better Buying Power (BBP) 2.0 guidance memorandum states that the factor that has the greatest impact on effective performance of the Defense Acquisition System is “the capability of the professionals in our workforce” (Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (OUSD[AT&L]), 2013, p. 24). To support the initiative of establishing higher standards for key leadership positions (KLPs) brought about by the BBP 2.0, KLP Qualification Boards were established to “certify AWF personnel as qualified for key leadership positions” (OUSD[AT&L]), 2013, p. 24). The AWF consists of program management, engineering, contracting, and product support disciplines engaging in a wide scope of activities throughout the product life cycle (OUSD[AT&L]), 2013). The life cycle of a product, either supply or service, starts with the development of the idea behind a need, moves to the development of that idea into a defined product or service, progresses to the delivery of the supply or service to the end user, and then concludes with the sustainment of that supply or service until it is no longer needed (Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD[A&S]), 2020a).

The AWF consists of uniformed enlisted and officer personnel as well as civilians who work together to support the military (Schwartz et al., 2016). This research focuses on the field of program management and contract management within the AWF for uniformed personnel. The PM and KO are the key positions within the program management and contracting career fields. The efficient support and effective integration of PMs and KOs are needed for the successful acquisition, sustainment, and delivery of services and other equipment in response to military requirements. The primary responsibilities for a PM are to balance the cost, schedule, and performance of a project through its development phase until the military capability is fully fielded and sustained. Moreover, the PM’s duties consist of understanding the warfighters’ needs and executing the requirements in a way



that is consistent with DoD guidance and federal regulations. Lastly, the PM ensures that high quality, affordable, supportable, and effective defense systems, supplies, and services are delivered expeditiously to the military to support the warfighter. The KO also serves a vital function in the AWF and works collaboratively with the PM. The primary responsibility of a KO is to write, administer, and terminate contracts to procure products and services that satisfy the DoD's requirements while abiding by federal acquisition regulations. The KO works closely with the PM, the customer, and technical specialists to generate explicit requirements packages, develop acquisition strategies, and purchase capabilities. For the PM and KO to be good at their jobs, the training they receive must provide the basic skills that will make them successful.

DoD leadership is responsible for providing training, education, experience, and mentorship to the AWF professionals to support what can be argued as the best-equipped military in the world. According to the 2020 National Defense Authorization Act (NDAA), the DoD needs to evaluate the state of the AWF capability in areas such as certification, education, training, experience, and leadership development (Berger et al., 2019). The DoD mandates PMs and KOs to meet certain certification requirements to qualify to execute the duties of their positions. Each Service, namely the Army, Navy, Air Force, and Marine Corps, in turn, has different training paths and experience requirements for PMs and KOs to be eligible to hold these positions within the AWF. The AWF must enhance qualification and certification processes to heighten the performance effectiveness of government acquisitions and better serve the DoD as a whole.

The DoD relies on the Defense Acquisition University (DAU) to maintain Core standards under the Defense Acquisition Workforce Improvement Act (DAWIA). DAWIA, which was passed into law in November 1990, was enacted to improve the professionalism and effectiveness of the personnel that manages DoD acquisitions by improving the education, training, and experience levels of acquisition professionals (Navy Personnel Command, 2019). Specifically, each Service has different timelines for its officers to reach these training and educational requirements during their careers. It is important, for the sake of maintaining consistency, for the services to be able to work together and be able to replace one member of an acquisition team with another, from another services, when necessary. An Army PM should not have to worry about, for



example, about a Navy KO doing something incorrectly for fear that they will not be as knowledgeable or experienced as an Army KO. Since each Service has different training timelines and different requirements, however, currently it can often be difficult for separate services to work together because of different levels of knowledge and experience.

A. PROBLEM

For major defense acquisition programs (MDAPs) and Joint acquisition programs in particular, each Service provides representatives on the acquisition team. The differences in how the services develop and use their uniformed acquisition officers create challenges for the effective management of large acquisitions, which can span multiple years. PMs and KOs can rotate out of a program every 2 to 4 years. When a new PM or KO transfers into a multiyear program and is not as competent as one from a different Service, the learning during the process can create management inefficiencies that affect the program's cost, schedule, and performance baseline. Since each Service has different career path steps and timelines in training PMs and KOs, the level of competence is not consistent across the services, and in a Joint program office this may affect the overall efficiency of the DoD acquisitions. The Joint environment is where all the services come together to work towards a common goal or idea that is important to more than one Service. An example of a Joint major MDAP is the Joint Strike Fighter program for next-generation strike aircraft for the Navy, Marine Corps, and Air Force.

As Ashton Carter, the former U.S. Secretary of Defense (SECDEF), stated, "Today's security environment is dramatically different and more diverse and complex in the scope of its challenges than the one we have been engaged with for the last 25 years" (OUSD[AT&L]), 2016, p. 7). The former SECDEF also stated that leadership needs to adopt new ways of thinking and performing to develop workforce strategies to close competency gaps. The nature of requirements is changing due to the transformational environment and the changing character of warfare and it requires new ways of thinking and acting (OUSD[AT&L]), 2016).

A 2000 Government Accountability Office (GAO) report, *Federal Acquisitions: Trends, Reforms and Challenges*, states that "despite budget surplus, the federal government continues to face compelling fiscal pressures," which means "that government



acquisition, a major component of discretionary spending, will have to compete with other funding priorities for scarce federal resources” (p. 2). Furthermore, a 2019 GAO report specified that “Congress and the administration face difficult policy choices about federal revenues, spending and investment; choices that need to be accompanied by a broader fiscal plan to put the government on a more sustainable long-term fiscal path” (GAO, 2019b, p. 100). These reports highlight that the change in the way the government spends money and the increase in demand for funding from various sectors is changing the very nature of how the government allocates funding. With these budgetary demands, it can be inferred that the services are adjusting to becoming more Joint in nature towards more combined requirements to optimize budgetary allocations.

B. RESEARCH QUESTIONS

The primary question that guides this research is: “What current career path practices for PMs and KOs across the services should be adopted from one Service to the others to maximize competencies and effectiveness in program management and contract management in Joint acquisition programs?” To answer this primary research question, there are two secondary research questions that this thesis seeks to answer: “What are the services’ career paths for active-duty uniformed Acquisition Officers?” and, “Why do the services have different development timelines for Acquisition Officers?” This research examines each Service’s career path for PMs and KOs across the certification process, education requirements, and career milestones.

C. WHY THIS RESEARCH IS IMPORTANT

We opine that symmetry in training education, certifications, and experience for PMs and KOs across the services will enhance environment outcomes in Joint acquisition programs. The primary objective of this research is to provide a model career path framework as a baseline that each Service could consider implementing when developing PMs and KOs. This approach involves comparing the current career paths for PMs and KOs in the Army, Air Force, Navy, and Marine Corps acquisition fields and then designing a common career development path that all services could employ. A common career development path may promote greater efficiency and symmetry within the AWF,



supporting acquisition efficiencies irrespective of military services. More efficient management of the career path development across the services will benefit the DoD and allow the services to work together towards desired acquisition program outcomes. A common career path for PMs and KOs may promote the efficiencies sought by the 2010 to 2015 Better Buying Power initiatives from 2010 to 2015, such as removing “unproductive processes and bureaucracies for both industry and government” (OUSD[AT&L], 2015, p. 18).

The efficient career path model provided by this thesis suggests potential improvements to the development of uniformed military acquisition officers within the services so that, ultimately, the shared knowledge will be synchronized to promote a level field of competency. The purpose of this research is to compare the career path development of Army, Air Force, Navy, and Marine Corps PMs and KOs to identify differences in the development of the PMs and KOs. After analysis of the differences, the research conclude our study by suggesting best practices across all the four services and recommend a common career path framework for all the services to use that will offer the best knowledge at each level of an Acquisition Officer’s career.

D. METHODOLOGY

This research relies on several methods for collecting information. The first method is an extensive literature review of the AWF in the PM and CM career fields. The literature review consists of various DoD Joint military doctrines, regulation publications, GAO reports, and prior Naval Postgraduate School (NPS) master’s theses. This literature examines what research has been done previously and allows the researchers to answer the study’s research questions. This literature review also allows for comparison of each Service’s processes and frameworks concerning career field education and training of uniformed acquisition officers in the PM and KO professions.

Each Service’s processes are compared to identify milestones for career progression, highlighting the potential benefits in the training and development of Acquisition Officers. Throughout this process, each Service’s career development process for acquisition officers is discussed. Next, the certification requirements, education, and experiences that the DoD requires of acquisition officers within each of the services are



studied. Then, an analysis of how and why the services manage their acquisition officers differently is performed. Finally, the identification of possible aspects of one Service, that can be carried across to other services are identified.

E. RESEARCH ROADMAP

This MBA research project is divided into five chapters that examine the uniformed military Acquisition Officer career path development. The first chapter introduces the framework, problems, and questions of PMs and KOs of the AWF. The methods in data collecting to answer the research questions are also indicated in this chapter. The second chapter consists of background information on the AWF through a literature review of information on the development of PMs and KOs. The third chapter is devoted to gathering data from those works of literature. The fourth chapter formulates data and develops findings to form the best results for the research. The last chapter contains the conclusion of the findings and a recommendation on a career path for all services to utilize when developing their PMs and KOs. Also included are recommendations for further research into this topic.



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II. BACKGROUND

There has been many long-standing, continual, reforms to the DoD's acquisition program over the past 50 years (Fox, 2011). Fox (2011) and Allen stated that "the problems of schedule slippages, cost growth, and shortfalls in technical performance on defense acquisition programs" have been the basis for many defense acquisition program reforms from the 1960s to the present (p. vii). According to Layton's (2007), "major cost overruns, schedule slippages, and performance shortfalls," along with "significant problems in procuring routine and less complex items," caused the public to have a lack of confidence in the government procurement process, which led to many reforms in government procurement policy (p. 7). For instance, in the early 1980s, there were some embarrassing instances of gross and comical overpayment by the Pentagon for various nonessential items, such as a \$400 hammer or a \$600 toilet seat (Ocasio & Bubnitz, 2013). President Ronald Reagan established the Packard Commission in 1986 to decrease inefficiencies in the defense procurement system. According to the Packard Commission, the fundamental issues with the acquisition process since 1969 were cost growth, schedule delays, and performance shortfalls (Fox, 2011). Essential recommendations from this group included revamping the acquisition process, boosting tests and prototyping, transforming the organizational culture, upgrading planning, and creating the competitive firm model where appropriate (Christensen et al., 1999).

In 1969, David Packard, founder of Hewlett Packard, who also served as the Deputy Secretary for Defense, recognized that a mechanism for the effective management of defense acquisition and controlling cost was necessary. In 1972, Packard released the DoD Directive 5000.1 The Defense Acquisition System, which in turn created the DoD Directive 5000 Series, which governs all aspects of the Defense Acquisition System (Ferrara, 1996). Packard, in his founding document for the Defense Acquisition System, stated:

Successful development, production, and deployment of major defense systems are primarily dependent upon competent people, rational priorities, and clearly defined responsibilities. Responsibility and authority for the acquisition of major defense systems shall be decentralized to the maximum



practicable extent consistent with the urgency and importance of each program. (Ferrara, 1996, p. 111)

Packard also defined a position that would be overall responsible for the execution of defense systems:

The development and production of a major defense system shall be managed by a single individual (program manager) who shall have a charter which provides sufficient authority to accomplish recognized program objectives. Layers of authority between the program manager and his Component Head shall be minimum, ... [The] assignment and tenure of program managers shall be a matter of concern to DoD Component Heads and shall reflect career incentives designed to attract, retain, and reward competent personnel. (Ferrara, 1996, p. 111)

The intent Packard displayed in this foundational document has, over time, guided many modifications to the DoD Directive 5000.1, subsequent 5000 Series documents, and many of today's defense acquisition statutes, policies, and institutions (Ferrara, 1996). One of the most significant reforms since Packard created the Defense Acquisition System was the Defense Acquisition Workforce Improvement Act (DAWIA), which was created largely in response to continued budgetary restrictions and was passed into law with the 1991 National Defense Authorization Act (NDAA; Garcia et al., 1997). The NDAA of 1991, spearheaded by Representative Nicholas Mavroules, established the requirement for a Defense Acquisition University (DAU), and over time, the DAU has created a premier training environment. Its curriculum is recognized as the Core standard for all DoD acquisition professionals, for training requirements (Layton, 2007).

The DAWIA was intended to improve the professionalism and effectiveness of the personnel who manage DoD acquisitions by enhancing the education, training, and experience levels of acquisition professionals (Navy Personnel Command, 2019). The DAWIA was created to "regulate both civilian and military acquisition professionals" (Ocasio & Bublitz, 2013, p. 5). The act also "provided a new set of opportunities for documenting the professional development and advancement of the civilian [acquisition] population" (Ocasio & Bublitz, 2013 p. 5). To incorporate the uniformed acquisition personnel under the DAU, in 1991, the DoD published DoD Directive 5000.57, Defense Acquisition University, which stated that the services would provide to the DAU acquisition personnel training requirements and allocate annual student quotas to the DAU



(Office of the Deputy Secretary of Defense, 1991). As part of the NDAA of 1991, the Acquisition Corps was formed to regulate, certify, and record the essential and critical acquisition education, training, and experience of each member across the armed forces. The creation of the Defense Acquisition System and the changes enacted from the NDAA of 1991 were a result of changes between how industry and the DoD interacted when it came to acquisitions (Layton, 2007). During the era of World War II and the Cold War, from 1939 through 1991, the relationship between government and industry evolved due to the continued intricate nature and evolution of weapons systems (Layton, 2007). According to Layton (2007), this evolution changed the government's role to that of a program manager who managed teams of contract managers, a role for which the government was woefully underprepared.

Packard had characterized the DoD AWF as undertrained, underpaid, and inexperienced. The training and career path management of acquisition personnel were inadequate, and as a result, Packard called for the creation of a professional acquisition corps with specific standards, education, training, and experience requirements (Layton, 2007). Layton (2007) further stated that training of government acquisition professionals was “decentralized, fragmented and often of poor quality” (p. vi), so in response, a government agency needed to be established to focus on the education and development of acquisition professionals. The first step in making this effort successful was establishing, in 1986, the Office of the Under Secretary of Defense for Acquisition (OUSD[A]); (Layton, 2007). This creation was intended to limit the internal government conflicts and improve the organizational structure of the government's Acquisition Corps (Layton, 2007). In 1994 the USD(A) was redesignated as the Under Secretary of Defense, Acquisition and Technology (USD[A&T]); the office then transitioned into the OUSD(AT&L) in 2000, at which time it shifted its focus to an emphasis on life-cycle responsibilities. In 2017, the OUSD(AT&L) split into two organizations, the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD[A&S]) and the Office of the Under Secretary of Defense for Research and Engineering (USD[R&E]), where OUSD(A&S) remains the organizational head of government acquisitions (Mehta, 2017). The DAU, which falls under the management of the USD(A&S), provides the training for acquisition career field certification, as well as assignment-specific requirements and executive-level development



for AWF personnel (DoD, 2019). According to the DoD Acquisition Workforce Strategic Plan FY2016-Y2021, the DAU is “the corporate university for the AWF” which “fosters professional development for members of the workforce throughout their careers” (DoD, 2016, p. 53). The AWF is comprised primarily of civilian personnel (approximately 91%), while the uniformed service members make up the remaining 9% of the AWF; however, the DAU certifications apply to the entirety of the AWF (DoD, 2019). Figure 1, retrieved from the Human Capital Initiative, which is a part of the OUSD(A&S) shows the current breakdown of the AWF, between civilian and military, and then further breaks down the military by Service and acquisition career fields.



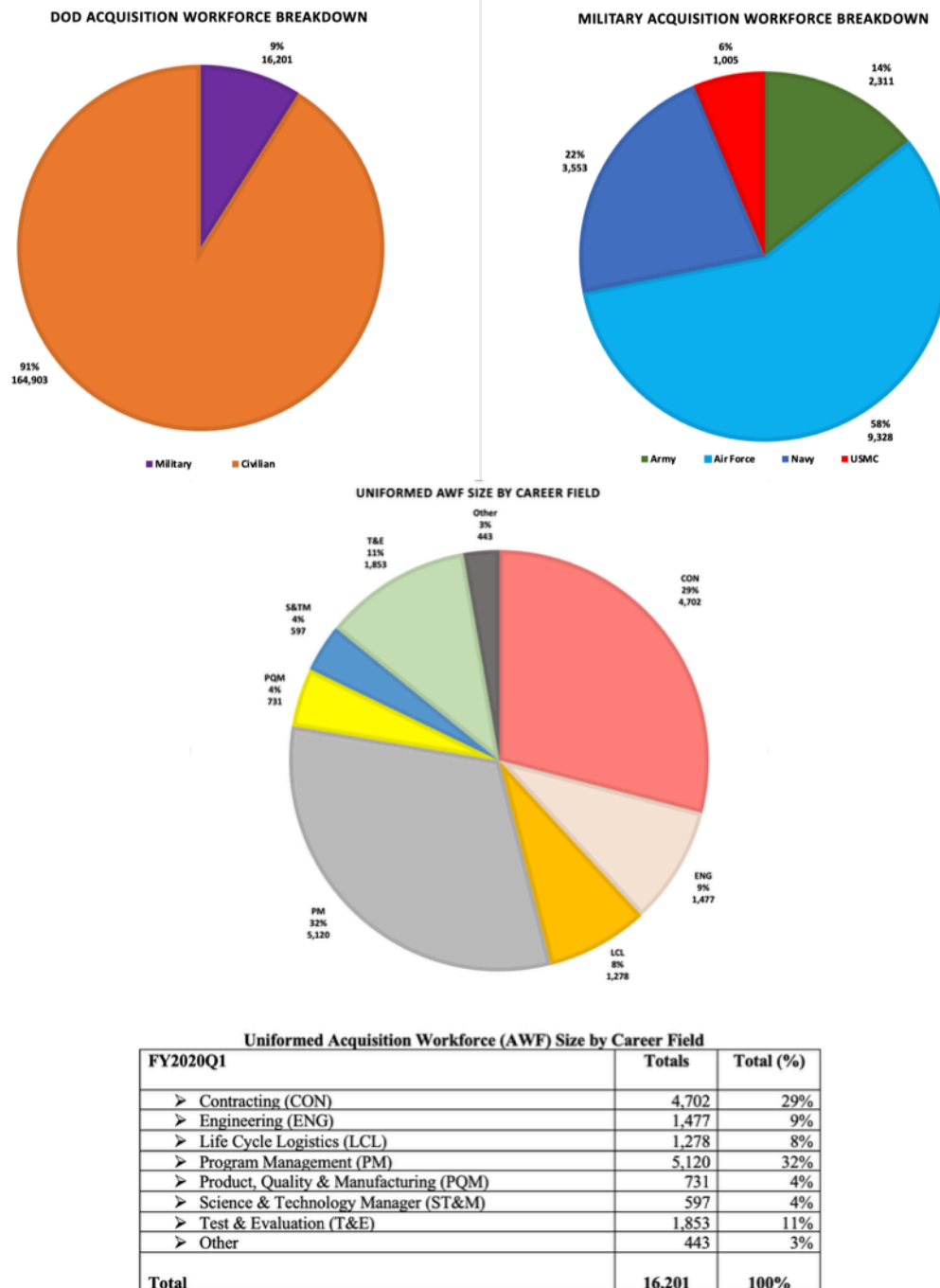


Figure 1. Acquisition Workforce Demographics. Adapted from Human Capital Initiatives (2020).

Within the first year of its inception, the DAU tackled the immediate task of redesigning the curriculum and management of the course development process for the functional areas (Layton, 2007). According to Layton (2007), DoDI 5000.52, *Acquisition Career Development Program*, was used to indicate what courses needed development and



the standards that would be used for certification, as well as to establish the three levels of certification still used today. The DAU redesigned the courses to ensure maximum educational effectiveness, which included the use of Bloom's Taxonomy for the course development framework. Bloom's Taxonomy is a hierarchal model that classifies particular types of learning into categories, each of which has a graduated and increased degree of complexity (Phillips, 2019). For example, 100-level courses build knowledge and comprehension, while 200-level courses build application and analysis skills. Together they create the foundation for critical, creative thinking and team cohesion. Then the 300-level courses are designed to allow the student to evaluate, synthesize and apply the skills they learned in the 100- and 200-level courses, sustaining positive performance over time. This model the DAU used is displayed in Figure 2.

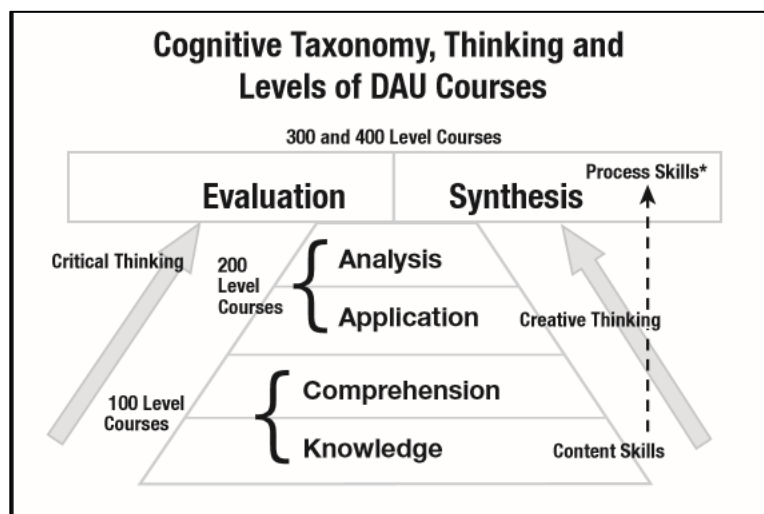


Figure 2. Bloom's Taxonomy and DAU Courses. Source: Layton (2007).

The DAU's Level I and Level II courses create a fundamental knowledge in the functional area and make a specialist out of the acquisition professional, whereas Level III is the pinnacle of achievement in the curriculum and moves the acquisition professional from a specialist, who specializes in one area, to a generalist, who is a creative problem-solver (Layton, 2007). With the continued evolution of certification requirements, instead of the DoD impractically updating the DoDI 5000.52 annually, the DAU publishes an annual course catalog, which details the current certification checklists so that members of

the AWF know what to expect for certification in each of the functional areas at each level of certification (Layton, 2007).

A. PROGRAM MANAGEMENT

The purpose of the Defense Acquisition System is to manage the nation's investments, support the services in a timely manner, and acquire capabilities at a fair and reasonable price (DoD, 2020b). Because it is the PM's responsibility to "ensure a project is completed successfully, within budget, on time, and according to the specifications," program management is one of the most important functional areas within the DoD's acquisition system (Rendon & Snider, 2019, p. 4). For the DoD acquisition system and acquisition personnel, one main goal is acquiring goods and services to support the warfighter in defense of the nation. For this purpose, the DAU has developed training courses that support the development of the program management workforce, consisting of individuals who support the effective and efficient integration of all functional area efforts for a successful acquisition (DoD, 2019). Within these training requirements, the three levels of certification have "assignment types" that guide personnel to the courses that are required for each level and assignment type. For program management, the assignment type activities change as the certification levels increase. Appendix A is the DAU catalog, which gives the training, education, and experience required for certification of the three levels for program management. Table 1 shows the percentages of the program management career field within each Service.

Table 1. Uniformed Defense Acquisition Program Management Workforce
by Service

FY2020Q1	Army	Air Force	Navy	Marine Corps	Totals
Program Management	3,539	6,868	5,904	786	17,097
Total Component (%)	20.7%	40.17%	34.53%	4.6%	100%

Appendix A describes the DAWIA-specified courses that a PM would need to take to receive a certification, which is then further broken down by assignment types. The assignment types separate the type of procurement the PM would be managing, specifically weapons system, services, or business management systems/information technology. Each



assignment type has representative activities that give task descriptions as examples of what the PM would be doing in that assignment. Each DAWIA certification level is assigned courses with training, education, and experience requirements. Each of the three certification levels has Core Standards courses, which are mandatory, and Core Plus courses, which are suggested to enhance the knowledge of the PM in that specific area. For each DAWIA certification level, there are listed training course numbers and titles, and then each assignment type indicates whether a PM would need to take that specific training course to receive certification. After each listed training course, at each certification level, education and experience requirements are listed. The one significant difference between the certification levels is that at Level III, a PM has to have “at least 24-semester hours from among accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management” in order to achieve certification (DAU, n.d.). Along with the DAWIA certification, each service has slightly different definitions of what a PM is and does, as well as different training and experience requirements for their PMs.

1. Army

The Army identifies its military officer acquisition workforce with the designator of 51 (U.S. Army Acquisition Support Center [USAASC], 2020). Uniformed PMs in the Army are designated as 51As and are responsible for the management of a program’s cost schedule, performance, risk assessment, mitigation, and test and evaluation (USAASC, 2020). Throughout the life cycle of a program, Army PMs manage the efforts and interaction of the government and industry partners (USAASC, 2020). The uniformed officers assigned as PMs for the Army are required to maintain current DAWIA certifications specific to the career field, as well as the type of acquisition assignment, as depicted in Appendix A (USAASC, 2020). Army uniformed officers apply for the Army Acquisition Corps as “senior captain [s] or major level [officers] who are branch-qualified,” and it is recommended that they have at least 24 undergraduate business hours so that the Army can train and retain the highest quality personnel for the Army Acquisition Corps (Gambles et al., 2009, p. 26). Once Army officers enter the Acquisition Corps and are assigned a functional area (51A for PM or 51C for KO) the focused functional training



begins, transitioning them from generalists to specialists (Gambles et al., 2009). Aside from DAU and DAWIA certifications, uniformed Acquisition Corps officers are required to maintain a current level professional military development as well as continued learning points throughout the remainder of their career (Gambles et al., 2009). The Army additionally has a U.S. Army Acquisition Support Center (USAASC) that provides individuals with career decision assistance, education on legislative and regulatory requirements, and awareness (Carroll & Hicks, 2018). Figure 3 is the current Army Acquisition Corps career path model that the Army recommends all PMs, who are members of the Army Acquisition Corps, follow.

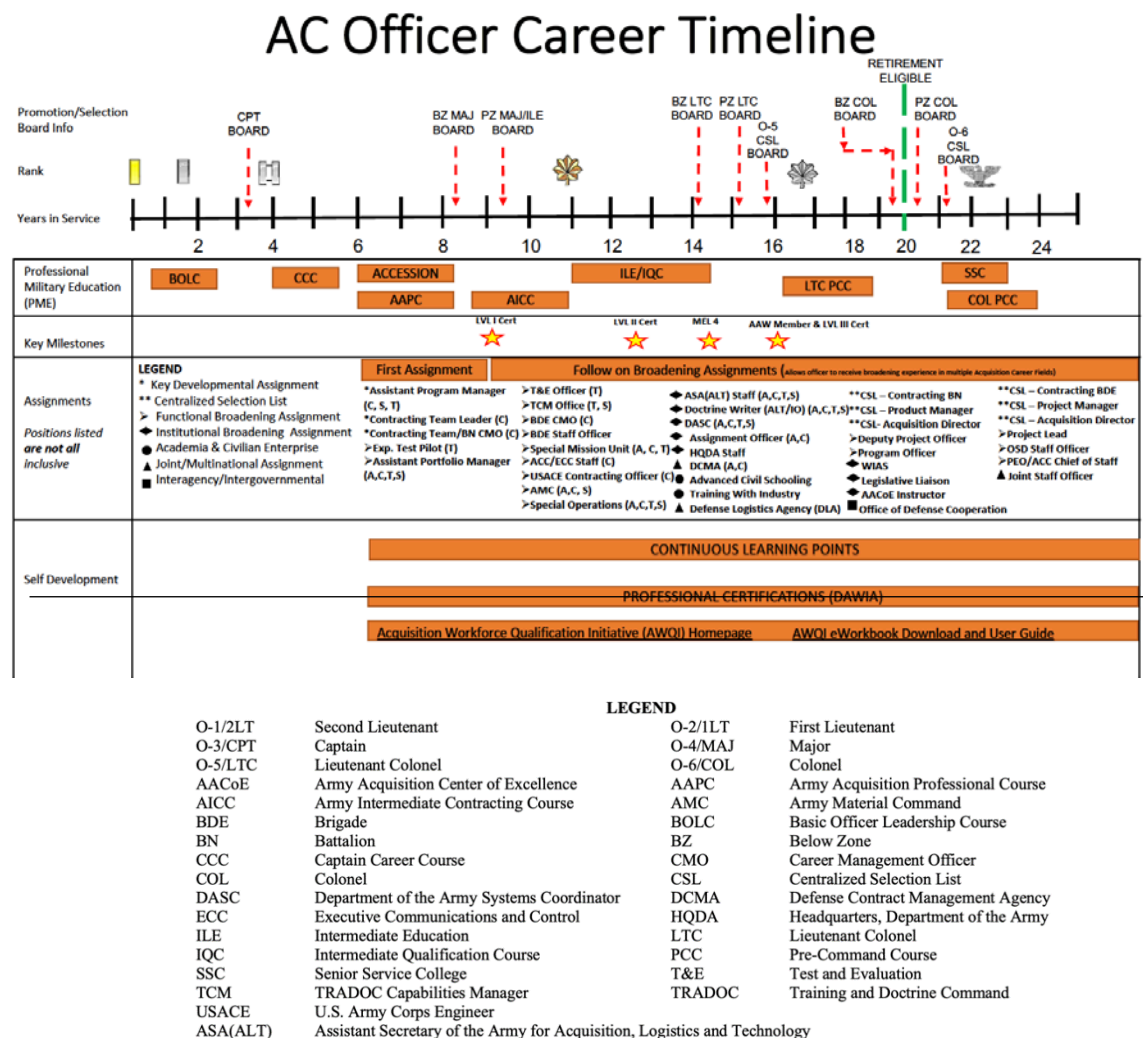


Figure 3. Army Acquisition Corp Career Timeline. Adapted from DA (2010).



2. Air Force

The Air Force identifies its program managers as acquisition managers in the acquisition utilization field, with the AFSC of 63AX (Air Force Personnel Center [AFPC], 2012). For brevity and to maintain consistency, the acquisition managers for the Air Force are identified as PMs. In the Air Force PMs plan, organize, and direct acquisition management activities (Department of the Air Force [DoAF], 2012). According to the *Acquisition Managers: Career Field Education and Training Plan* publication, PMs manage acquisition programs, covering every aspect of the acquisition process (DoAF, 2012). PMs also develop, review, coordinate, and execute acquisition plans to support daily operations, contingencies, and warfighting capabilities (DoAF, 2012). For the Air Force, the acquisition management career field is a combination of Office of the Secretary of Defense (OSD) mandated certification training, run by the DAU, and additional Core Plus recommended training for specific types of assignments that support Air Force continuous learning requirements (DoAF, 2012). For uniformed PMs, the career path begins at Second Lieutenant (O-1), but some officers cross over into the career field at Captain (O-3 grade) after they complete their primary development training (DoAF, 2012). Like the Army, the DAU courses are the main component of the training for Air Force PMs. However, the Air Force has the Air Force Institute of Technology (AFIT), which provides courses that earn DAU equivalencies that meet Level I DAWIA certification requirements (DoAF, 2012). PMs in the Air Force, for their first assignment to the AWF, are expected to build depth through technical experience and develop skills as a project manager and acquisition specialist (DoAF, 2012). Figure 4 is the current AF PM which the AF career path progression model that all AF 63As follow.



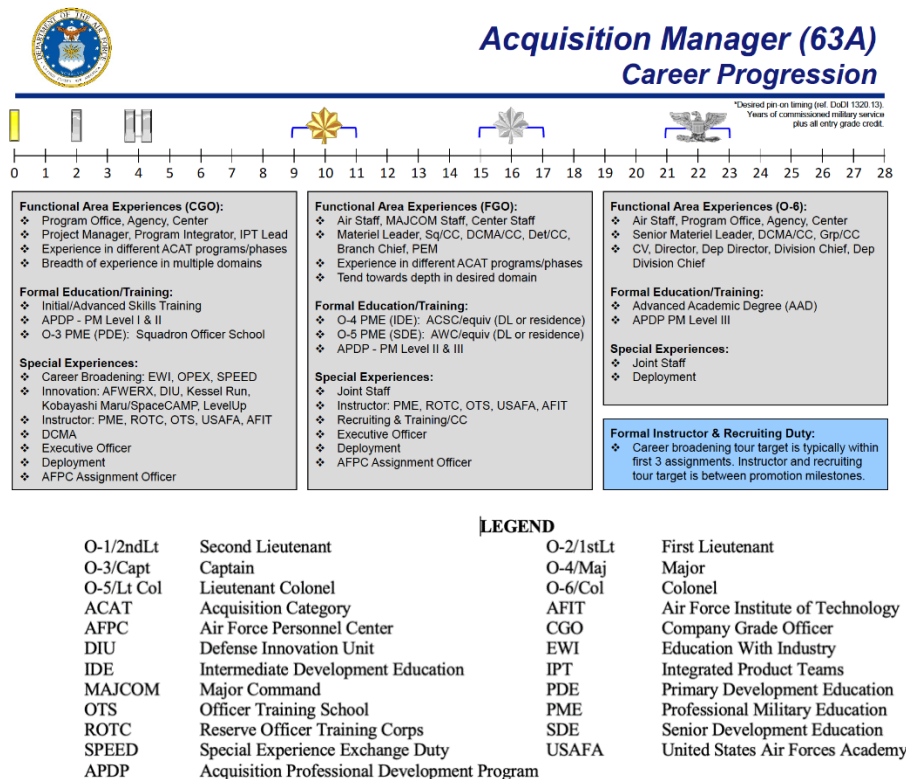


Figure 4. Air Force PM Career Path. Source: DoAF (2012).

3. Navy

Uniformed PMs in the Navy have a designator of AAX, which is called their additional qualification designator (AQD). The first two alphanumeric characters (AA) of the AQD are the same for the program management Navy officer at all levels. The third character (X) indicates assignment responsibility and officer certification level (Navy Personnel Command, 2020). The Navy is not unique in its PM responsibilities; however, it is unique in how it identifies the experience for the officer. An officer can hold only one AAX AQD at a time (i.e., AA2 supersedes AA1). The Navy recognizes officers from the grades of W-2 to O-9 as being eligible for DAWIA Levels I to III, or AA1, AA2, and AA3. The qualifications can be held indefinitely by either active or reserve components. The ability for reservists to hold the qualifications is important for manpower and the filling of critical billets, because with AWF shortages sometimes there is not an adequate number of active-duty officers to fill the positions. Once a Navy officer obtains the Level III certification (AA3), there are opportunities to fill the program management AQD coded billets of AAC and AAK for critical and key positions, respectively. Officers in the O-4 to



O-9 pay grade are eligible for the AAC qualification, and those in the O-5 to O-9 pay grade are eligible for the AAK qualification (Navy Personnel Command, 2020). Another qualifier to fill either the AAC or AAK billets is to have the APM code, which means the individual is “fully qualified” in the respective career field. The AAC and AAK qualifications are awarded upon assignment to a billet, whereas AA1 to AA3 are given upon completion of a given task, such as coursework or experience time.

In the Navy, there is no guarantee that an individual will progress from AA1 to AAC/K. After all, experience is driven by time in a certain billet, and the billet must be coded for the PM AQD. To go from AA1 to AAC/K, a Navy officer will have to be assigned to as many as six billets over 12 years considering the sea-to-shore rotation schedule and an average tour length of 24 months (Navy Personnel Command, 2019). The 2018 GAO study entitled, *Defense Acquisition Workforce: Opportunities exist to improve practices for developing program manager*, recognized that while the Navy does have a career roadmap and detailed description of skills and competencies needed for the PMs who supports aircraft, it does not have these tools for PMs who support surface ships (GAO, 2018). The lack of clear guidance for career field advancement and periodic breaks in job experience result in either stagnation at a current certification level or prolonged time to obtain a higher certification level. Figure 5 displays the recommended career path for the Navy AWF which was recommended from a previous NPS thesis, *Modeling the Department of Navy Acquisition Workforce with System Dynamics* written by Joe Everling, Liz Rosa, Altyn Clark, and David Ford in 2017. The Navy currently does not have an officially recognized career path for its uniformed acquisition workforce personnel.



DRAFT - Career Navigator Framework – DRAFT – Updated 11/16/17

Life Event	(e.g. Married, Move to new area, Buy house, civic responsibilities, Children, School events, Recreation, Travel, Death of Loved One)																													
	Entry				Journeyman												Expert								Senior Leader					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	Level of Responsibility and Influence Increases																													
Results & Awards	(e.g. Valued Team Member, Successful Project Leader, LOAs, Performance Awards)				(e.g. Cross Functional Team implemented new pay system, Team Leader for \$20M Cost Reduction IPT, Successful Source Selection LOAs, AEA and Performance Awards, Meritorious Award)												(e.g. Mentoring and Leading High Performance teams that earn recognition from Fleet and DON)													
Experience	Demonstrate Executive Leadership, Program Execution, Technical Management, Business Management																													
Industry	(e.g. Industry job, assignment in SECDEF Fellows Program)																													
RDA Level	(e.g. Rotation in DASN, 3 year assignment in DASN)																													
Broadening	(e.g. SYSCOM Development Program, Assignment or rotation in SYSCOM/PEO outside of normal job duties)																													
Within Domain/ SYSCOM	(e.g. Work in a Warfare Center, rotation or assignment in SYSCOM, assignment in a Domain such as Ships, Subs, C4I,...)																													
Certification	DAWIA Level				DAWIA Level II								DAWIA Level III								KLP Requirements									
Mentoring	1 st Line Supervisor + 1				2 Mentors								SES Mentor and Become Mentor for others								Mentoring Others									
Training	(e.g. Introductory and Broadening Courses – IWS courses, Weapon System Safety, EVM, Finance, Contracting, Engineering)																													
Technical	(e.g. SYSCOM Boot Camp, Capitol Hill Workshop, Public Speaking, Technical Writing)																													
Professional																														
Personal Development	Personal Mastery – Lead Self Communication Professionalism Stress Management Critical Thinking Decision Making Customer Service Flexibility				Interpersonal Mastery – Lead Teams/Projects/People Technology Management Creativity & Innovation Conflict Management Problem Solving Team Building Accountability								Organizational Mastery – Lead Organizations/Programs Technical Credibility Resource Management Human Capital Mgt. Developing Others/Mentoring Entrepreneurship Resilience								Motivational Mastery – Lead the Institution Vision Partnering Political Savvy Strategic Thinking External Awareness Influencing/Negotiating									
Education	Associate's/Bachelor's				Master's								Master's/Doctorate/Executive Education																	
Character	Take Federal Employee Oath; Exemplify Standards of Conduct, Moral Character, Honor, Courage, Commitment, Integrity, ...																													

Figure 5. Recommended Career Path for Navy AWF. Source: Everling et al. (2017).

4. Marine Corps

Marines uniquely identify their uniformed personnel with only a four-digit number, called a military occupational specialty (MOS), and no letters. Uniformed PMs in the Marine Corps have four MOS designations: 8057, 8058, 8059, and 8061. Warrant Officers and Limited Duty Officers are assigned only the 8060 MOS and are considered acquisition specialists in the AWF. The Marines' designators essentially identify officers' level of experience and are only held while in certain positions, called areas of functional expertise (Marine Corps System Command [MCSC], n.d.-a). The 8057 designation is acquired by O-1 to O-3 officers and is distinctly named "acquisition professional candidates" to indicate their positions as "associates" in the project office (Department of the Navy [DoN], 2015). The MCSC acquisition officer candidates "assist in planning, directing, coordinating, and supervising specific functional areas that pertain to the acquisition of equipment or weapons" (MCSC, Acquisition MOS, n.d.). The 8058 MOS is considered the



contract manager embodies the responsibilities of the contracting officer, and therefore can be used interchangeably. The contractor and KO are the “two hands that shake” in a government contract and are the personnel on both sides of the agreement that are responsible for the successful completion of the contract (Lohier & Johnson, 2019). The KO, hereafter referred to as CM in this research, manages contracts from conception to completion and is the primary government official responsible for ensuring compliance with contractual agreements (Director, Defense Procurement and Acquisition Policy, 2012). The National Contract Management Association (NCMA; 2019) defines *contract management* as

The actions of a contract manager to develop solicitations, develop offers, form contracts, perform contracts, and close contracts. It is a specialized profession with broad responsibilities that include managing contract features such as deliverables, deadlines, and contract terms and conditions.
(p. 6)

Currently, and for many years prior, the Government Accountability Office (GAO) has identified contract management as a high-risk area for the DoD. The DoD obligates hundreds of billions of dollars annually on contracts for goods and services, roughly two-thirds of the DoD annual budget (GAO, 2019b). One of the major areas identified as high risk by the GAO is the AWF specifically AWF personnel’s skill level, because a skilled AWF is vital to maintaining military readiness and saving the DoD money (GAO, 2019b). The DAU is responsible for training of contract management personnel, with the individual Service components providing additional service-specific training. Just as with program management, the DAU has come up with specific training course requirements to support the development of CMs. Contract management also currently has three levels of certification and 10 different assignment types that dictate what courses are required for certification, which is detailed in Appendix B. Appendix B provides the DAU catalog that gives the training, education and experience required for certification of the three levels for contract management. Table 2 shows the percentages of the contract management career field within each Service.



Table 2. Uniformed Defense Acquisition Contract Management Workforce
by Service

FY2020Q1	Army	Air Force	Navy	Marine Corps	Totals
Contracting	8,533	8,374	6,405	564	23,876
Total Component (%)	35.74%	35.07%	26.83%	2.36%	100%

Appendix B contains the contracting core curriculum that covers all three certification levels, broken down by certification levels and assignment types. Contract management differs from program management in the assignment types because there are 10 different assignments, though the representative activities do not change across the certification levels as they do for PMs. Each level for CMs has specified Core courses that are taught through distance learning or in residence. These required Core Standards courses are supplemented with Core Plus courses that are designed to deliver assignment type specific training for each functional area. Each DAWIA certification level for contract management has different experience requirements, and for education. CMs are required to hold baccalaureate degrees. However, since the 2020 NDAA was published, the 24-semester hours in business courses are no longer required for Level I and Level II certification (NDAA, 2019). As with PMs, the services have slightly different definitions of what a CM is and does, as well as different training and experience requirements for their CMs.

1. Army

The Army identifies its military officer acquisition workforce with the designator of 51 (USAASC, 2020). Contract management in the Army is designated as 51C. KOs work with the PMs to make determinations on contract awards supporting the acquisition programs that the PMs manage (USAASC, 2020). KOs can work on acquisitions for the warfighter, systems, or service contracting and within the Army Corps of Engineers, the Defense Contract Management Agency (DCMA), the Defense Logistics Agency (DLA), or at any level of Army operations (USAASC, 2020). Along with a PM, a uniformed officer's career as a CM usually begins as a Captain (O3), when officers are selected for the acquisition branch within the Army (Gambles et al., 2009). Similar to PMs, KOs also



are required to maintain the DAU and DAWIA certifications for the career field, as well as the type of acquisition assignment they hold (Gambles et al., 2009). Uniformed Army KOs are also required to concurrently maintain current level professional military development as well as continued learning points that support their career assignment (Gambles et al., 2009). Army KOs also have the support of the U.S. Acquisition Support Center (USAASC) for assistance with career decisions, legislative and regulatory requirements education, and awareness of the changes within the AWF (Carroll et al., 2018). Figure 7 is the current Army Acquisition Corps career path model, that the Army recommends all CMs, who are part of the Army Acquisition Corps, follow.

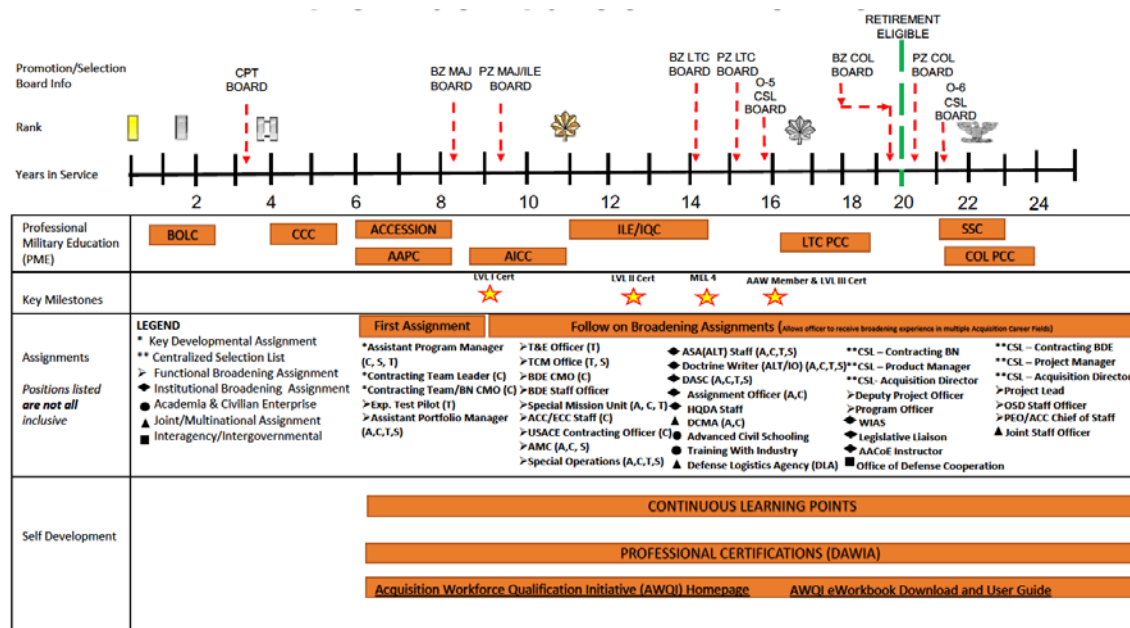


Figure 7. Army Acquisition Corp Career Timeline. Adapted from DA (2010).

2. Air Force

The Air Force identifies its contracting uniformed personnel as “contracting” in the “contracting utilization field” and with the AFSC of 64PX (AFPC, 2012). Within this research, for brevity and to maintain consistency, the contracting uniformed personnel for the Air Force are identified as contracting managers (CMs). The Air Force trains its uniformed acquisition officers beginning when they initially commission, specializing them in their functional discipline. This is one of the main differences between the Air Force and the other services (DoAF, 2014, p. 41). The Air Force creates technical



specialists, where the other services create generalists before transitioning them to specialists later in their careers. In the contract management field, from Second Lieutenant (O-1) to Colonel (O-6), uniformed acquisition officers are submerged in the AWF from day one. The Air Force has its uniformed AWF personnel complete the DAU's required certifications, which are required for acquisition professionals by DAWIA, but it also supplements additional learning specific to the Air Force. The Air Force has also developed specific courses to augment the DAU courses with additional information on Air Force specific processes and methodologies, providing a working knowledge of key functional disciplines and the Defense Acquisition System (Aufderheide et al., 2011). As Air Force officers progress in rank they are provided career development within the contract management field. The Air Force deliberately develops its acquisition professionals along well-defined career path models designed to provide the experience, education, and training necessary to execute positions of higher authority (Aufderheide et al., 2011). Figure 8 is the current AF CMs career path progression model that all AF 63As follow.

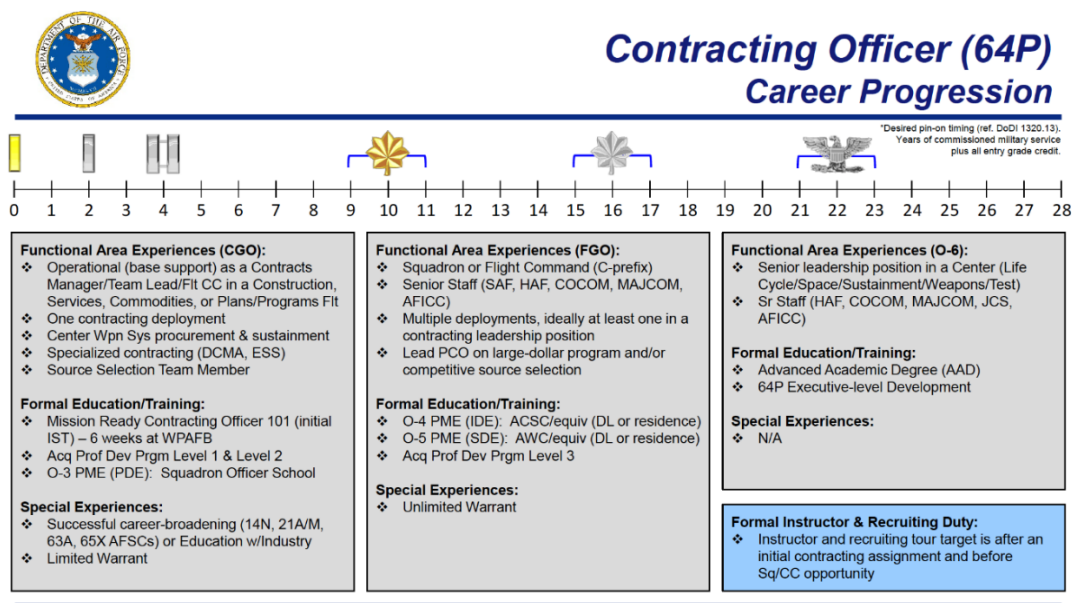


Figure 8. Air Force PM Career Path. Source: DoAF (2012).

3. Navy

Uniformed KOs in the Navy have a designator of ACX as their AQD. The first two alphanumeric characters (AC) of the AQD are the same for the contracting Navy officer at all levels. The third character (X) indicates assignment responsibility and officer



certification level (Navy Personnel Command, 2020). The Navy is not unique in the responsibilities of the KO; however, it is unique in how it identifies the experience for the officer, and an officer can hold only one ACX AQD at a time (i.e., AC2 supersedes AC1). The Navy recognizes officers from the ranks of W-2 to O-9 as being eligible for DAWIA Levels I to III, or AC1, AC2, and AC3, respectively. The qualifications can be held indefinitely by either active or reserve components. The ability to allow reservists to hold the qualifications is important for manpower planning and the filling of critical billets when there is not an adequate number of active duty officers to fill the positions. Once a Navy officer obtains the Level III certification (AC3) there are opportunities to fill the ACC and ACK billets. Similar to program management, for contract management, the ACC qualifications are available for eligible O-4 to O-9 uniformed officers, and the ACK qualifications are available for eligible O-5 to O-9 uniformed officers, where ACC is for “critical” billets and the ACK is for “key” billets (Navy Personnel Command, 2020). Another qualifier to fill either the ACC or ACK billets is to have the APM code, which means the individual is “fully qualified” in the respective career field. The ACC and ACK qualifications are awarded upon assignment to a billet, whereas AC1 to AC3 are given upon completion of a given task, such as coursework or experience time. In the Navy, there is no guarantee that an individual will progress from AC1 to ACC/K. After all, acquisition experience is driven by time in a certain billet, and the billet must be coded for the KO AQD. To go from AC1 to ACC/K, a Navy officer will have to be assigned to as many as six billets over 12 years considering the sea-to- shore rotation schedule and an average tour length of 24 months (Navy Personnel Command, 2011). Figure 9 is the Navy Supply Corps Career Progression path that Navy KOs use, as there is no recognized career path for Navy KOs.



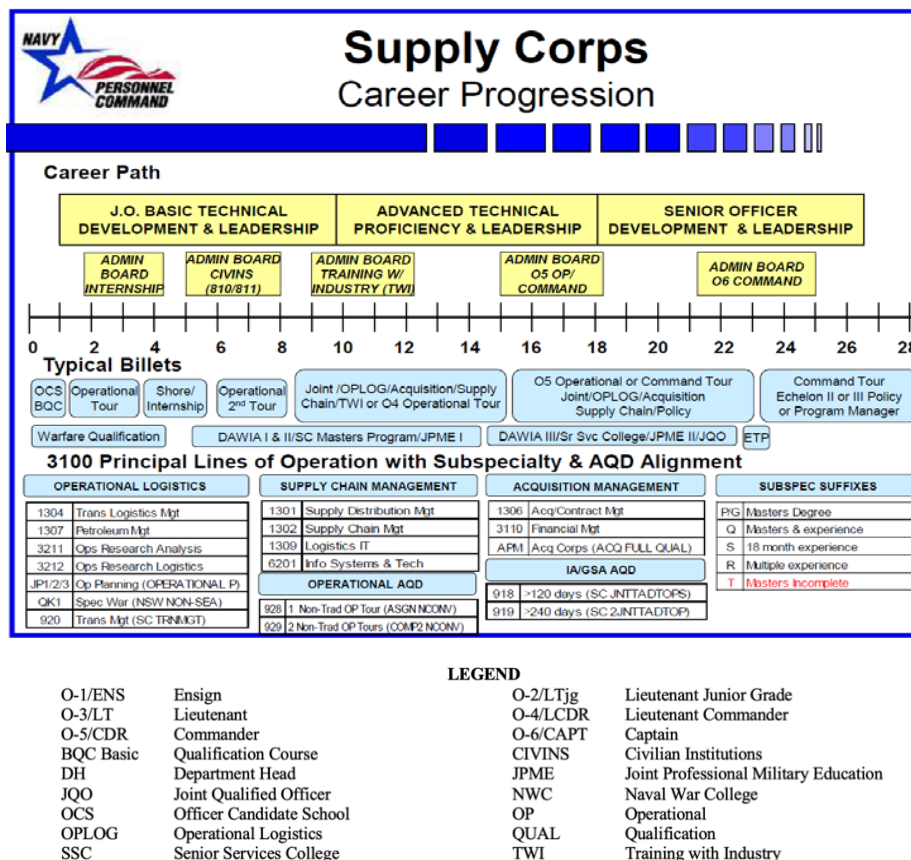


Figure 9. Navy Supply Corps Career Progression Path. Source: Office of Supply Corps Personnel (2011).

4. Marine Corps

Uniformed KOs in the Marine Corps have one MOS designation for officers: 3006. The 3006 MOS is a unique designator for the services. Where the other services' KOs could be considered generalists in what contracts they help to administer, the 3006 MOS is specifically for contingency contracting. Also, only Captains (O-3) or those selected for career designation as a First Lieutenant (O-2) can be selected for the 3006 MOS (DoN, 2015). Another unique feature of the 3006 MOS is what may be called a transitory feature of the Marine's experience. This means that upon completion of the contingency contracting tour, the Marine is eligible to transition to 8057 MOS, acquisition professional candidate, and 8058 MOS, acquisition management officer, for further career progression (NAVMC 1200.1A). Currently the Marine Corps does not have an official or recommended career path for KOs, as 3006 MOS is not a recognized PMOS.



C. SUMMARY

The founding of the DAU, as required by DAWIA, and subsequent changes to the AWF have greatly impacted the way that uniformed PMs and CMs are trained and educated across the services. The AWF is “charged with providing DoD with the management, technical, and business capabilities needed to execute the defense acquisition programs from start to finish” (Gates et al., 2018, p. xi). Due to the mid-1990 drawdown of the AWF and the buildup since 2009, it is important that decision-makers understand where DoD-wide human capital shortages or surpluses may be developing so that they can normalize those gaps and surpluses (Gates et al., 2018).

During the drawdown of 1990, the DoD ensured highly qualified AWF personnel were identified by establishing the elite, membership only, Acquisition Corps (Assistant Secretary of the Navy for Research, Development & Acquisition, n.d.). To be a member of the AC, there are certain rank, education, and experience requirements must be met (see Figure 10). To be a member of the AC, a uniformed member must be an O-4 or above and have a bachelor’s degree, 24 semester hours in business courses, and at least 4 years of acquisition experience (DON, 2019a). Initially, all services had their own AC with varying membership requirements, and it was not until 2005 that DoD Directive 5000.52 consolidated the separate component ACs into a single Defense Acquisition Corps (Assistant Secretary of the Navy for Research, Development & Acquisition, n.d.). The consolidation accomplished several things. First, it created a pool of highly qualified personnel to fill critical acquisition positions (CAPs) and key leadership positions (KLPs). Secondly, as stated by the Assistant Secretary of the Navy, Research Development and Acquisition, “AC membership in any component was recognized by all DoD components” (Assistant Secretary of the Navy for Research, Development & Acquisition, n.d.).



<p>EDUCATION</p> <p>Degree and credit hours must be recorded on a college transcript from an institution of higher education that is accredited by a regional agency, which is approved by the Secretary of Education to grant accreditation. Quarter- or trimester-hours must be converted to semester hours</p>	<p><input type="checkbox"/> Baccalaureate degree from an accredited educational institution, and</p> <p>One of the following:</p> <p><input type="checkbox"/> 24 semester credit hours from among the following disciplines: <i>accounting, business, finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management.</i></p> <p><input type="checkbox"/> 24 semester credit hours in the person's career field and 12 semester credit hours in the disciplines listed above in italics. Credit hours within the person's career field may also satisfy the requirement for part or all of the 12 credit hours in the disciplines listed above. The same hours may be used to meet both requirements.</p> <p><input type="checkbox"/> 24 semester credit hours in the person's career field and training equivalent to 12 semester credit hours in the disciplines listed above in italics.</p>
<p>CERTIFICATION LEVEL</p>	<p>One of the following:</p> <p><input type="checkbox"/> Military member certified at Level II or above in an Acquisition Career Field.</p> <p><input type="checkbox"/> Individual from outside DoD selected for a Critical Acquisition Position – qualified for certification at level II or above.</p>
<p>POSITION AND RANK</p>	<p><input type="checkbox"/> Military: Must be at the O-4 grade (vice O-4 select) or higher.</p>
<p>EXPERIENCE</p>	<p><input type="checkbox"/> 4 years of service in an Acquisition Position</p>

Figure 10. Acquisition Corps Requirements. Adapted from DON (2019a)

Because uniformed AWF officer's turn over at a higher rate than AWF civilians, an understanding of the similarities and differences in the training, experience, and education across the services is paramount (Gates et al., 2018). This is vital because in the instance that a uniformed AWF member is brought into the Joint program office environment, that member will have similar levels of experience, education, and training with other services to avoid management challenges and not meeting cost, schedule, or performance requirements of a program.



III. LITERATURE REVIEW

This literature review studies the common literature published about the AWF from 1996 to 2020. It covers several themes, such as training, education, and experience. The literature reviewed consists of Government Accountability Office (GAO) reports, RAND reports, Congressional Research Service (CRS) reports, DoD Instructions, DoD Doctrines, and regulations and publications from each of the services (Army, Air Force, Navy and Marine Corps). Also included are previously published Naval Postgraduate School (NPS) master's theses and a few articles published in quarterly magazines, such as *Army AT&L* and *Contract Management Magazine*.

The governing document for education and training of the AWF is the Defense Acquisition Workforce Improvement Act of 1990, which created the DAU and established education and training requirements for acquisition personnel within the DoD (Defense Acquisition Workforce [DAW], 2019). The law, titled *Defense Acquisition Workforce*, is updated with amendments as requirements change over time. Moreover, 10 U.S.C. 1701 states that the Secretary of Defense, through the Under Secretary of Defense, Acquisition, Technology, and Logistics, will “establish policies and procedures for the effective management (including accession, education, training, and career development) of persons serving in acquisition positions in the Department of Defense,” as well as ensure that “acquisition workforce policies and procedures ... are uniform in their implementation throughout the Department of Defense” (DAW, 2019). Furthermore, 10 U.S.C. 1748 also specifies that there are standards that will demonstrate competence in the area in which AWF personnel receive training, criteria that must be met for the training to be considered complete (DAW, 2019). As of 2019, 10 U.S.C. 1701 states that a certification program will be created that “shall be based on standards developed by a third-party accredited program based on nationally or internationally recognized standards” (DAW, 2019). Congress recognized that improvements in the way the DoD handled acquisitions were needed. Therefore, the enacted laws required that there must be education standards and certification requirements that need to be met, and that nonservice specific universities would create a curriculum for the entire DoD to follow. It is essential to understand what is required, by law, in the education and training of AWF personnel. The following



publications were analyzed for symmetry among the services' AWF practices to create to a model career path framework for each Service to consider implementing.

A. GOVERNMENT PUBLICATIONS

According to Layton's (2007) *The Defense Acquisition University: Training Professionals for the Acquisition Workforce, 1992–2003*, 10 U.S.C. specifies the DAU as a third-party accredited program and develops standards and courses for DoD certification requirements. Layton's (2007) book provided the history of the DAU, starting with the legislation that founded the DAU, until 2003, when the DAU had been operating and instructing students for a few years and its reputation as a premier corporate university was solid. Layton (2007) explained how the DAU was created to train the DoD acquisition personnel as professionals and how the DAU was meant to be the training center for entire DoD acquisition community. Still, this achievement would not come without significant and constant adjustment to the university and the training program, like the delivery method and content of the training. Layton further discusses how the defense acquisition community went through a redesign early in the DAU's history, that focused on creating professional career paths for the community that led to "career development programs, certification standards, and research and publication capabilities" (Layton, 2007, p. 16). Layton discusses the corporate enterprise structure of the DAU that led to the establishment of a precise curriculum that was aimed at meeting DAWIA certification standards, which led to the DAU's recognition as a "best in class" corporate university for acquisition professionals (2007, p. 119).

The Air Force utilizes the *Contracting: Career Field Education and Training Plan* (CFETP) to manage the training and education of its contract management officers. The CFETP for the Air Force Specialty Code (ASFC) 64PX career field is called CFETP 64X (DoAF, 2014). The CFETP 64PX highlights the education and training required of Air Force CMs, which each CM follows to become fully qualified contracting professionals within the Air Force (DoAF, 2014). This document also allows individual CMs and their commanders to build a personalized career path with the institutional information the CFETP provides. This training and education plan starts at the entry-level 64P1 and continues to the qualified 64P3 CM, and then goes on to the 64P4 staff-level CM. It also



emphasizes the importance of what the DoAF states is “adequate training and timely progression” of CMs and the importance this plays in the Air Force at large (DoAF, 2014, p. 20). The CFETP is broken down into a three-stage development model that the DoAF (2014) claims “expound [s] on the occupational competencies, career development opportunities, APDP [Acquisition Professional Development Program] requirements, and AFSC levels within each of the three development stages” (p. 20). The APDP is how the Air Force implements the DAWIA certification requirements within the acquisition career fields of the Air Force. The three stages of the CFETP development model are tactical, operational, and strategic, all of which are designed to provide experience and build contracting competencies in the CMs.

Similar to CFETP 64PX, CFETP 63AX & 1101 provides training and education information for PMs in the Air Force (DoAF, 2012). The significant difference from the CFETP 64PX is that it applies to the uniformed officer PM as well as the civilian PM who works for the Air Force. This plan is used as a training roadmap for Air Force acquisition personnel that “identifies mandatory qualification and training certification requirements acquisition managers must receive during their time” in the career field (DoAF, 2012, p. 1). The CFETP 63AX & 1101 is broken into two parts, the first of which provides necessary information on the management of the career field, and the second of which is used at the unit level to “identify, plan, and conduct training” for PMs at all levels and types of commands within the Air Force (DoAF, 2012, p. 1). There are three levels in the program management career field for the Air Force: entry level (1 to 3 years), intermediate/qualified level (4 to 10 years), and staff or senior level (beyond 10 years). The Air Force Officer Classification Directory (AFOCD) specifies that if an officer begins at entry-level acquisition management (which equates to a PM), it is desirable for the officer first to be assigned to another unitization field whenever possible (AFPC, 2012). Those that begin in program management should seek, according to the AFPC, “a subsequent assignment in another unitization field followed by a return to the acquisition program management career field” to gain a broader perspective of the interaction between program management and other types of commands (AFPC, 2007, p. 191).

Unlike the Air Force, the Army does not have a CFETP to guide acquisition personnel through training and education requirements. Still, the Department of the Army



(DA) Pamphlet 600-3, *Officer Professional Development and Career Management*, is used for this purpose (DA, 2010). DA Pamphlet 600-3 serves as a professional development guide and covers the full range of opportunities for the successful development of a career as an Army officer. DA Pamphlet 600-3 that its purpose is to “focus the development and career management of all officers of the United States Army” (DA, 2010, p. 1). Chapter 42 of the DA pamphlet covers acquisition officers, including the acquisition career field (ACF) for PMs (called ACFA) and CMs (called ACFC), and goes over the required characteristics and development of regular active component AAC officers; it also covers the reserve component of the Army AAC officers (DA, 2010). Within Chapter 42 are the purpose, functions, and career specializations of the Army Acquisition Officer. The Army AAC officer is expected to “develop functional expertise” in two or more of the ACFs and expand their expertise by “different and unique assignments” throughout their careers (DA, 2010, p. 391). ACF officers are expected to seek and gain experience in several different areas of acquisitions through their job and not remain single-tracked in their professional development. The DA pamphlet goes into further detail about the duties of the ACFs, certification requirements within the ACFs, and professional and self-development requirements for officers.

Just like the Air Force and the Army, the Navy uses the *Department of the Navy (DoN) Defense Acquisition Workforce Improvement Act (DAWIA) Operating Guide* (DoN, 2019a), which provides “policy, guidance, and tools to assist DoN Acquisition Workforce (AWF) members in planning and accomplishing their acquisition career goals” (DoN, 2019a, p. 1). The *DoN DAWIA Operating Guide* assists members of the Navy who would like to become members of the AWF and guides current members of the DoN AWF in ensuring compliance with DAWIA and DoD policies. For all levels of DAWIA certification, the *DoN DAWIA Operating Guide* describes certification levels and requirements across the training, education, and experience factors. This is a quick reference guide for DoN AWF members that consolidates DAWIA and DoD requirements in one location.

On the other hand, the Marine Corps NAVMC 1200.1E (DON, 2019c) gives basic descriptions of all MOSs within the Marine Corps. Within the NAVMC 1200.1E, there are summaries of the duties and responsibilities of the five different MOSs associated with



officers assigned to the PM field and the one MOS assigned to KOs in the contract management field (DoN, 2019b). This document also gives the general prerequisites and the requirements for each respective MOS (DoN, 2019b). If there is an aspect of training, education, or experience that is not covered by DAWIA, the Marine Corps, as a department of the Navy, would adhere to Navy training to fill the gaps in Marine Corps publications.

B. GOVERNMENT REPORTS

The Government Accountability Office (GAO) is the proverbial “congressional watchdog” whose main priority is to examine how taxpayer dollars are spent by governmental agencies, including the Department of Defense (DoD). The GAO is a priority resource for research on how well a process in federal agencies is conducted and is trusted to be a nonpartisan, independent agency. The GAO website contains over 712 AWF-related reports and testimonies from January 2000 to July 2020. The challenge with the GAO reports is that they are rarely focused on active-duty military. Specifically, the GAO reports concerning the AWF are more than likely referring to the civilian and active duty military as a group. This is a concern because the importance of investigating the differences between services is lost to the researchers without substantive research that extrapolates how certain policies impact active-duty military.

Opportunities Exist to Improve Practices for Developing Program Managers (GAO-18-217) is one of the 712 reports and testimonies related to acquisitions accessible on the GAO website (GAO, 2018). Congress commissioned the GAO to provide a comparison of how the private sector trains, mentors, retains, and selects its PMs and whether the DoD could learn from the successes as well as the failures in this area (GAO, 2018). The GAO (2018) found that there are 10 critical practices for training, mentoring, retaining, and ultimately selecting skilled PMs. This report also found that the services aligned extensively with four of the practices (see Figure 11), but with the other six, not all services aligned completely, if at all. The report is telling of not only how aligned the DoD is with best practices in the private sector, but also how dissimilar the services are to each other.



Leading Practices That All Military Services Align with Extensively

Leading practices	Air Force	Army	Navy
Training classes that allow program managers to share experiences	●	●	●
On-the-job learning and information repositories	●	●	●
Recognition	●	●	●
Assignment based on skills, experiences, and program needs	●	●	●

Legend: ● = extensive alignment ○ = partial alignment ○ = little to no alignment

Source: GAO analysis of Department of Defense information. | GAO-18-217

At least one military service's practices do not align extensively with five of the leading practices, as shown in the table below.

Leading Practices That Not All Military Services Align with Extensively

Leading practices	Air Force	Army	Navy
Rotational assignments	●	○	○
Mentoring programs with senior leader involvement	●	●	○
Career paths that describe skills needed to advance	●	○	○
Education subsidies	○	●	●
Identification of high-potential talent by senior leaders	○	●	○

Legend: ● = extensive alignment ○ = partial alignment ○ = little to no alignment

Source: GAO analysis of Department of Defense information. | GAO-18-217

For the remaining leading practice, none of the military services' practices align extensively, as shown in the table below.

Leading Practice That No Military Service Aligns with Extensively

Leading practice	Air Force	Army	Navy
Financial rewards for good performance	○	○	○

Legend: ● = extensive alignment ○ = partial alignment ○ = little to no alignment

Source: GAO analysis of Department of Defense information. | GAO-18-217

Figure 11. Leading Practices by Military Services. Source: GAO (2018).

The 2011 GAO report, *Better Identification, Development, and Oversight Needed for Personnel Involved in Acquiring services* (GAO-11-892), identified that more than half of the 430 personnel involved in 29 Service acquisition contracts were, in fact, non-DAWIA-qualified personnel (GAO, 2011). In some cases, it is not necessary to be DAWIA-qualified to contribute to successful service acquisitions. The report indicates, however, that there is a shortfall somewhere in certified new hires. Non-DAWIA-qualified



personnel, usually requirements officials, were put in positions that require DAWIA certification. The GAOs (2011) recommendation to the Secretary of Defense (SECDEF) was to “establish criteria and a timeframe for identifying non-DAWIA personnel with acquisition-related responsibilities, including requirements officials” (GAO, 2011, p. 22). The DoD pushed this recommendation to the Service Chiefs by establishing the Acquisition of services Functional Integrated Product Team (FIPT) in August 2012 (GAO, 2013). The Air Force, along with OSD and DAU representatives, were the only Service to implement a pilot program in 2016 to identify individuals in roles that require DAWIA certifications but did not hold certification while in those position (GAO, 2019d). However, since the release of the GAO (2019d) report, there have been no other programs or implementations. The research on the need for qualified acquisition professionals to be provided with key or critical positions to gain experience is not exact, but it can be gleaned from the services’ personnel and workforce status reports that those positions exist but are not necessarily filled with the right people. Even with non-DAWIA staff in acquisition roles, the report drove the DoD to complete a services acquisition competency crosswalk, which identified competencies that personnel with acquisition-related responsibilities should have and courses to obtain these competencies (GAO, 2011). In 2017, the *DoD Handbook for the Training and Development of the services Acquisition Workforce* incorporated the findings of the crosswalk.

Information on Workforce, Organizational Structure, and Budgeting for Selected Programs (GAO-19-209) is the latest report from the GAO concerning the makeup or composition of the AWF, at least for 11 DoD MDAPs major defense acquisition programs (GAO, 2019a). The report gives insight into the priorities of manning specific programs and how technical development or the stage of the program within the acquisition life cycle influences the workforce size and composition. Another influence of workforce size and mix is the use of contractor support. According to the 2019 report, in an audit from November 2018 to March 2019, it was identified that contractor support was usually provided to augment DoD military and civilian personnel because of an increase in workload, to provide a technical skill that was lacking, or to do work on a project that was too short in duration to justify hiring someone permanent (GAO, 2019a). There are several factors that the GAO highlights in this report, but there is only one factor that is relevant



to this research. The GAO report indicates that every Service the Navy, Army, and Air Force has the means to provide PMs and KOs from support organizations particular to their Service. The Navy has Navy Air Warfare Center Weapons Division and Naval Air Warfare Center Aircraft Division to pull engineering expertise for various projects; the Army has the Army Contracting Command for contracting functions; and the Air Force has its support organization in the Life Cycle Management Center (GAO, 2019a). The personnel from these support centers are not staffed at a particular program but are shared among many organizations, very similar to what could be called a matrix organization. Officials at the support centers control the pool of experts. Interestingly, there is no indication of a blending or Joint support center of acquisition specialists. In other words, can a contracting officer from the Army Contracting Command be loaned out to an Air Force program? The GAO report does specify that military positions are centrally budgeted by the respective military department's military personnel appropriations act.

The RAND Corporation is a nonprofit, nonpartisan, research organization that cooperates with or is commissioned by policy makers to develop solutions impacting security, health, and education, among other issues, worldwide. In 2018, the RAND Corporation, through its National Defense Research Institute, prepared *Analyses of the Department of Defense Acquisition Workforce* for the Office of the Secretary of Defense (Gates et al., 2018). The 2018 report is an update to previous analyses conducted first in Fiscal Year (FY) 2006 and again in FY 2011. The report's audience is any official responsible for the acquisition of workforce planning and management in the DoD. Specifically, RAND's report found several trends during its decades-long study (Gates et al., 2018). First, the DoD AWF has grown steadily over the past decade with a concentration in the civilian sector. Second, the current staff consists mainly of younger, better educated personnel, stemming from an uptick of baby boomer retirees and the fact that the DoD hires from outside rather than from within. Third, when comparing the civilian AWF to the DoD-wide civilian workforce, the attrition rates remain lower in the former. Figure 12 shows the change in numbers over time of the AWF broken down by civilian and military members.



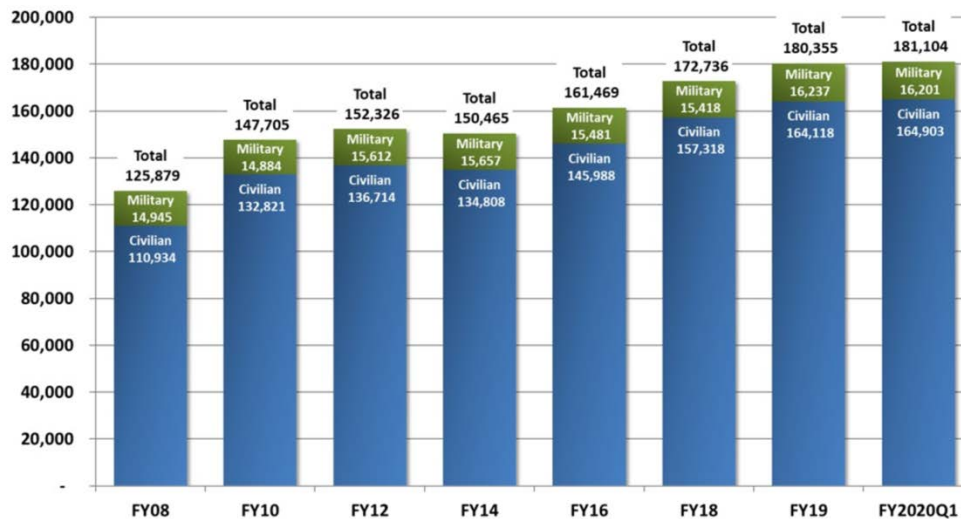


Figure 12. Overall AWF Total. Source: Human Capital Initiatives (2020).

The final two points are pertinent to the research at hand. The RAND report states the size of the military AWF has remained steady from FY2006 through the FY2017 study, yet increasingly more turnover takes place than with its civilian counterparts in the AWF. Lastly, according to the 2018 RAND report, program management roles are more likely to be filled by military AWF members than civilian equivalents.

C. JOURNAL ARTICLES

A peer-reviewed article, “The Contracting Officers and Contract Managers of the Future: Roles that Must Continue to Evolve,” by Jean Marceau Lohier and Brandon J. Johnson (2019), describes how the current contracting officer pool and the civilian equivalent contract managers need to change the way they do business to stay relevant in the future. The authors “assess [ed] the current state of contracting officer/contract manager relationship and examine [d] possible ways the roles can evolve to better meet the technical competencies that are re-shaping workforces” (Lohier & Johnson, 2019, p. 32). The concise article covers a large portion of the responsibilities of the KO according to the Federal Acquisition Regulation (FAR). This article also includes some reasons as to why the current structure does not work in the current technical environment, such as KOs not having the knowledge to recommend input to the design or specifics of a requirement in systems that are tightly controlled by technical fields. Lohier and Johnson (2019) also give some general recommendations for changing the existing structure of how KOs operate.



The argument base for this article is that the traditional roles of the contracting officer/contract manager cannot be relied upon in the future; contracting managers and contract officers will not only have to be experts in their fields, but they will also need to have an ample knowledge in a multitude of areas to be successful in managing a contract life cycle (Lohier & Johnson, 2019).

The *Army Acquisition Logistics and Technology (AL&T)* magazine, though not peer-reviewed, publishes articles about the U.S. Army Acquisition Corps (AAC) and acquisition career management tips for those in the Army acquisition fields. An article therein briefly describes the unique roles and responsibilities of officers in Functional Area (FA) 51 within the AAC (Gambles et al., 2009). FA 51 encompasses the officers that support the five DoD acquisition career fields within the AAC, where 51A is the designator for acquisition officers in the program manager career field and 51C is the designator for acquisition officers in the contract management career field (USAASC, 2020). Two of the authors, Gambles and Johnson, are the 51A and 51C proponent officers, respectively, for the USAASC, and Jones is the Senior Enlisted Advisor for the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (AL&T). With this article, Gambles et al., (2009) are reinforcing the AAC's goal of "accessing qualified personnel, meeting DAWIA/regulatory and statutory requirements, developing trained and ready leaders, and providing quality education, training, and experiential opportunities" (p. 29). This article offers a guideline for 51A and 51C training and career progression for officers in the AAC, provided in Figure 13.



Pasindorubio et al., (2018), in their thesis *Marine Corps Acquisition Optimization*, postulated that there was a gap in a comprehensive analysis of how the Marine Corps conducts contracting and acquisition activities. Pasindorubio et al. (2018) provided four courses of action that may optimize the acquisition operations of the Marine Corps, one of which analyzed whether the Marine Corps could benefit from integrating with already existing contracting programs, such as expanding the use of the Naval Supply System's government-wide commercial Purchase Card Program. Here is a scenario where officers in one Service can learn from and apply policies from another Service that take very few, if any, changes to put into effect. This process of sharing resources amongst the Service to maximize gains and efficiencies could be called "blending" or "sharing" of best practices. It would be assumed that of all the services, the Navy and Marine Corps would share or blend resources in such specialized fields, considering they fall under the umbrella of the Department of the Navy. However, more differences must be tapered by the DoD if the desire is to be increasingly useful in what could be Joint-minded acquisition endeavors. Tapering of the differences means understanding the differences of the cultures with the mindset to fill in the gaps of comprehension with similar policies and learned experiences.

Another example of a blending or sharing of best practices was discussed in Kaul and Wilson's (2013) thesis titled *Qualification Requirement Perceptions of the United States Army Acquisition Workforce Since Implementation of the Defense Acquisition Workforce Improvement Act (DAWIA)*. Kaul and Wilson (2013) revealed how the Army used the Navy's Personnel Qualification Standards (PQS) system, where on-the-job training (OJT), mentoring, and qualification are implemented, as a model for its Acquisition Qualification Standard (AQS). Kaul and Wilson (2013) also found that the Army's introduction of the pilot AQS program has brought a meaningful contribution to the professional development of its acquisition-trained officers above and beyond DAWIA certification. The authors recognized that professionals in program management and contracting must demonstrate their knowledge and experience to verify the efficacy of their function in the acquisition system. Kaul and Wilson's (2013) thesis was a rare find, but it goes to show that there are cases of collaboration between the services.

There are two theses that should be highlighted for their contribution to awareness of contingency contracting in a Joint environment. A 2005 thesis on Joint Contingency



Contracting investigated and analyzed how “contingency contracting officers (CCO) can effectively operate in a Joint contingency environment and validate the Defense Contract Management Agency (DCMA) entry and exit criteria” (Johnson et al., 2005, p. 1). The authors recommended creating a Joint Contingency Contracting Command that “would be tasked with assisting in the creation of the doctrine and policies necessary in conducting joint contingency contracting organizations” and have the responsibility to “maintain oversight of the CCO” (Johnson et al., 2005, p. 134). The other thesis, *Army Contracting Command Workforce Model Analysis*, authored by Timothy Reed (2010), may very well be the best work comparing the agencies contracting workload standards (Reed, 2010). The primary goal of Reed’s (2010) research was to “identify different methods used to assess workload and staffing in Army contracting organizations as well as in the DoD” (p. 1). Reed’s (2010) tangential research goal was to:

Identify potential opportunities whereby the existing methodologies can be used to more accurately capture the amount and nature of the work performed by contracting organizations to ensure that the complexity of the work being at various stages within the contract process was reflected in the workload models, and to ensure that the level and quality of work was reflected in performance measurement models. (p. 2)

E. ANALYSIS OF REVIEWED LITERATURE

Upon review of the previously published documents, there is clear evidence that the fields of program management and contract management in the DoD have a deep history of focusing on training and education. It is further deduced that the same focus placed on training and education must be applied to the experience of the program management and contract management professional. It is only in the combination of consistent training, relevant education, and robust experience that the DoD will gain its desired AWF excellence. The argument has to be made that if the experience developed in the officer’s routine career track of the various services is robust enough to deliver on the promise of completing the missions of the DoD missions effectively and efficiently, then there would not be concerns that officers were not getting enough experience without gaps in knowledge. The discussion to follow postulates that the DoD has not used all the tools at its disposal to fully educate and enrich the program management and contract management professions. The gathered research thus far has just hinted at the blending or



sharing of resources among the Army, Air Force, Navy, and Marine Corps, but there is much more potential for a radical involvement of shared knowledge. The idea of a Joint military is not new; however, even among those within the military, the notion of Joint only comes to mind when discussing a particular agency (e.g., the Defense Contract Management Agency) or a specific tour of duty, like the Joint Forces Command Naples. If there were an agent or movement by the services to share their program management and contract management professionals where they are needed, the synergy could change the competitive culture and move into a new era of “purple,” another term for Joint, to distinguish from the traditional colors of the services (navy blue = Navy, black and gold = Army, sky blue = Air Force, and red = Marines). More dialogue is needed between the services about how the blending could be possible, considering the legislation and directives that control how the services are manned. This dialogue is essential in order to learn from the past and develop a better way forward.

F. CONCLUSION

In conclusion, it should be noted that this literature review is not exhaustive of all research concerning the contracting and program management fields in the DoD. This research narrowed down the literature that was focused on the training, education, and experience requirements for AWF personnel in the DoD. During the review of published literature, there were several prevalent themes uncovered throughout journal articles, DoD publications, governmental reports, and previous theses. It was discovered that some minor educational requirements, specifically the need for 24-semester hours in business courses for KOs to obtain Level I & II DAWIA certification, were lifted. This change was initiated not to hinder the involvement of individuals into the AWF, but rather to open the AWF up to more eligible officers with varying backgrounds. This change fosters a more robust community of professionals in the DoD AWF. The majority of these researched were those that narrowly focused on a particular Service and its problems with contracting or program management. These theses provided processes and courses of action that may only apply to that Service. Only upon further analysis did the researchers identify cases in which a solution for one Service may apply to other services. That is the focus of this research. Overall, the literature review revealed that the services generally comply with the DAWIA



certification requirements, but the career management of the officers could be more effectively integrated to produce officers better suited to serve in Joint billets, program management offices of Joint acquisition programs, or supporting contracting commands.



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IV. ANALYSIS

When individuals think about what a career path encompasses, they may think of a job or profession that has a particular path for achieving or reaching an objective (e.g., junior salesman to regional manager). This is true in many cases in the civilian world; however, this is not entirely true for careers in the military services. For example, an officer usually starts their career with some degree of formal collegiate education, usually a bachelor's degree, that could possibly have nothing to do with their chosen specialty, also called a career field or occupation.

For each military Service, the choice or selection of an officer to go on either the Program Manager (PM) career path or the Contracting Officer (KO) career path entails many factors. These factors are as unique as the individual they apply to and the Service to which they belong. However, examining the overlay of officer career progression timelines and positions held reveals some indicators that the services have more in common than previously presumed. The objective of this chapter is to determine if there are enough similarities among the services that there may be a recommended universal PM and CM career path for any service to follow. The primary categories that all other comparisons flow from in this thesis are education, training, and experience of the officer within the program management or contract management professions. This chapter includes an evaluation of the three categories across the program management and contracting career fields and identifies similarities and differences between the services.

A. EDUCATION

For the purposes of this thesis, the term *education* refers to obtaining a degree, such as a baccalaureate or master's, from an accredited university. *Training*, on the other hand, refers to courses designed to further the understanding of a uniformed military member in areas such as leadership and career enhancing skills and knowledge. All the services follow the DAWIA certification requirements for program management and contracting. DAWIA certification has mandatory educational requirements listed under the Core Certification Standards and further recommended education listed under the Core Plus development guide. "The Core Plus construct was designed to advance the DoD AT&L competency



management model by providing a ‘roadmap’ for the development of acquisition workforce members beyond the minimum certification standards required for their position” (“Spotlight on,” p. 64). It can be speculated that the Core Plus development guide provides a road map to understanding what avenues an officer should take to increase their competency and competitiveness for key leadership positions (KLP) and critical acquisition positions (CAP).

1. Program Management

For the program management education requirements for all three levels of DAWIA certification, a formal education is not required for certification under the Core certification standards for Level I through Level III. However, Table 3 shows that the recommended Core Plus development standards there are additional education recommendations for Level I through Level III. Under the Core Plus development standards, Level I requires a baccalaureate degree, and Level II requires a master’s degree. Then, for Level III certification, there are no further educational requirements other than having 24 semester hours from among accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management courses. This 24 semester hours requirement could be accomplished through a master’s degree program or continuing education courses throughout the career of the individual. For Level III, the 24 semester hours requirement can also be substituted with Defense Activity for Non-Traditional Education Support (DANTES) equivalency exams. DANTES Subject Standardized Tests (DSST) are tests that cover upper and lower-level baccalaureate credit courses (Military.com, 2020).

Table 3. Core Plus Recommended DAWIA Education. Source: DAU (n.d.).

Core Plus Development Guide (desired training, education, and experience)	
Education	
Level I	Baccalaureate degree, preferably with a major in engineering, systems management, or business administration
Level II	Master’s degree, preferably with a major in engineering, systems management, business administration, or a related field
Level III	At least 24 semester hours from among accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management (DANTES equivalency may be substituted)



a. Army

Since a formal education is not required for DAWIA certification, only 88% of the Army's AWF has a higher education degree (USAASC, 2020). The lack of necessity for a higher degree has not impeded the Army from establishing programs for Functional Area 51 Acquisition (FA 51A) Officers to pursue an advanced degree. The Advanced Civil Schooling Program is awarded by a bi-annual selection for regular Army officers and offers a full-time, fully funded master's or PhD level education at civilian universities (Advanced Civil Schooling [ACS], 2019). The intent of the higher education is to better prepare the officer for those positions, such as KLP or CAP, that require higher level education and to meet the needs of the Army.

According to Army Acquisition Corps pamphlet 600-3, officers qualify for the Acquisition Corps when they have:

received a Baccalaureate degree at an accredited educational institution authorized to grant Baccalaureate degrees, with at least 24-semester credit hours (or the equivalent) of study from an accredited institution of higher education from among the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management or equivalent training; or, at least 24-semester credit hours (or the equivalent) from an accredited institution of higher education in program management or contracting and 12-semester credit hours (or the equivalent) from such an institution from among the disciplines listed above. (DA, 2020a, p. 4)

Army officers also are required to have an Individual Development Plan (IDP), which is used to "track and maintain self-development requirements" (DA, 2020a, p. 4). The IDP is an outline of specific objectives that an officer is expected to accomplish during an assignment. One such requirement covered is the 80 continuous learning (CL) point requirement every 2 years for officers of all ranks in their career field.

b. Air Force

The Air Force has several continuing education programs geared toward creating a more rounded and operationally prepared officer. The education programs are very similar to the other services as far as their degree offerings and how attending them will provide the prerequisite for further DAWIA certification and senior leadership positions. The Air



Force Institute of Technology (AFIT) is a full-time military duty assignment that provides a graduate degree in engineering and management (U.S. Air Force, n.d.). AFIT also has an extension program called the Civilian Institution Program that provides specializations that is not available at AFIT (U.S. Air Force, n.d.). There are other continuing education programs that award graduate and undergraduate degrees but are more restricted to a functional area outside of the program management career field. The Air Force also gives its intermediate-level program management officers the opportunity to learn from industry in a 10-month Education with Industry (EWI) program to develop their understanding of industry-leading companies' processes and procedures (DoAF, 2012). The EWI program allows Air Force PMs to learn what initiatives the industry is undertaking and bring them back to the Air Force for possible implementation, as well as learn how to better interact with the industries when working with them on acquisition programs.

c. Navy

The Navy is no different from the other services in its emphasis on extended education for its officers. There is the Naval Postgraduate School (NPS) in Monterey, CA, that is essentially a Joint higher education bastion that provides master's degrees and PhDs in a variety of technical, non-technical, and management curricula. One unique feature of the Navy's offerings for graduate education, outside of NPS, is its segregation of the Unrestricted Line (URL) officers and the Restricted Line (RL) officers with regard to who can apply for the various programs. For instance, the URL officers are offered the Graduate Education Voucher (GEV) to earn a fully funded master's degree at a civilian university. The GEV is not offered to RL officers such as the staff corps Supply Officer. The Supply Corps has a program specifically for them, called the 810 program, which authorizes them to attend a civilian university.

d. Marine Corps

Uniformed program managers in the Marine Corps are similar to PMs in the other services when it comes to education, as they all have a bachelor's degree when commissioning into the Marine Corps. Again, this bachelor's degree is non-specific to their career within the service but is a requirement for a Marine to become an officer. The Marine



Corps has an annual screening board to select individuals for graduate education opportunities. This process is an effort to “integrate education into career paths and provide career planning guidance that capitalizes on education achievements and utilizations while appropriately retaining highly educated officers” (DoN, 2019c, p. 3). This screening process allows Marine Corps officers to receive a graduate education at one of the following institutions: Naval Postgraduate School, Air Force Institute of Technology, civilian institutions (limited to education and history degrees), and the partially funded Advanced Civilian School Program (Deputy Commandant Manpower and Reserve Affairs, 2020a). Any of these programs would assist in attaining a master’s degree, which would make the individual eligible for Level III certification and, once experience and rank requirements are met, AC membership.

The two MOSs that pertain to PMs in the Marine Corps are 8057 and 8058. The 8057, labeled Acquisition Professional Candidate, can rank from Second Lieutenant to Colonel, and is not required to be a member in the AC. Both the 8057 and 8058 “must have a baccalaureate degree from an accredited educational institution” (DON, 2015, p. 1-233). The 8058, labeled an Acquisition Corps Member or Acquisition Manager, in addition to the baccalaureate degree,

Must have completed 24-semester credit hours (or academic equivalent) of study from an accredited institution of higher education from among the disciplines of accounting, business finance, business law, contracts, purchasing economics, industrial management marketing, quantitative methods (math courses applied to business and management such as statistics, operation research, and mathematics normally taught in schools of business or management). (DoN, 2015, p. 1-233)

Alternatively, there are some other options to reach the 24 semester hours educational requirement for 8058s. Those options are

- [To] have at least 24-semester hour (or academic equivalent) of study from accredited institution of higher education in their primary acquisition career field along with 12-semester hours (or academic equivalent) from the business/management disciplines listed above. (DON, 2015, p. 1-233)
- Or, to complete coursework or degree programs from an accredited institution of higher education; applying American Council on Education (ACE) recommended semester-hour credits if documented in



the student’s transcript; and passing score on DANTES examinations may be substituted for semester credit hours. (DON, 2015, p. 1-233)

As seen in Figure 14, to begin as a PM in the Marine Corps uniformed officers meet the educational requirements as soon as they are commissioned. However, the assignment as a PM, or 8057, does not begin until they are a senior First Lieutenant or Captain and complete their basic MOS training.



Figure 14. Marine Corps Program Management Career Education Requirements. Adapted from Marine Corps System Command (n.d.-c).

2. Contract Management

As previously discussed, the minimum education requirement for all services in the contracting specialty is a baccalaureate degree, as shown in Table 4. The baccalaureate degree requirement is automatically met by all uniformed military officers because, in order to receive a commission, an individual has to hold an undergraduate degree from an accredited higher education institution.

Table 4. Contracting Core and Core Plus Recommended DAWIA Education. Source: DAU (n.d.).

Core Certification Standards (required for DAWIA certification)	
Education	
Level I - III	Baccalaureate degree (Any Field of Study)

Core Plus Development Guide (desired training, education, and experience)	
Education	
Level I	None specified
Level II	Graduate studies in business administration or procurement
Level III	Masters degree in business administration or procurement



a. Army

Army officers qualify eligibility for the Acquisition Corps when they have a baccalaureate degree at an accredited educational institution authorized to grant baccalaureate degrees, with at least 24 semester hours (or the equivalent) of study from an accredited institution of higher education from among the following disciplines: accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management or equivalent training; or at least 24 semester hours (or the equivalent) from an accredited institution of higher education in program management or contracting and 12 semester hours (or the equivalent) from such an institution from among the disciplines listed previously. Just like Army PMs, Army KOs are also required to have and follow an IDP.

b. Air Force

KOs in the Air Force are required to have a bachelor's degree from an accredited higher education school, based on the requirements from DAWIA. The Air Force requires that all contracting related education take place through the DAU, in line with the three certification levels (DoAF, 2014). The Air Force also requires its KOs to earn 80 continuous learning (CL) points every 2 years to maintain currency in the contracting field, in accordance with DoDI 5000.66 (DoAF, 2014). These continuous learning courses “will offer officers exposure to a significant amount of task related materials” (DoAF, 2014, p. 21). “The Core Plus Development Guides shown in the DAU iCatalog outline which CL courses are most applicable to a particular type of assignment” (DoAF, 2014, p. 48). The Air Force encourages its KOs to gain a master's degree early on in their careers because a KO “can apply skills and knowledge gained to [their] job related responsibilities” (DoAF, 2014, p. 36). Additionally, the longer a KO stays in the Air Force, the greater their responsibilities and expectations become, so completing a master's degree as a junior officer is encouraged (DoAF, 2014). A master's degree can be completed by attending NPS through the Air Force sponsored Advanced Academic Degree program or through the Air Command and Staff College or Air War College, either distance or in residence (DoAF, 2014).



c. Navy

The education requirements for the Navy's contract management career field have similar baselines as the other services. The core requirement is to have a baccalaureate degree by the time the officer reaches Level III (DoN, 2019a). However, it is highly recommended that the officer earns a master's degree in business administration or procurement (Office of Supply Corps Personnel [OSCP], 2011). The recommendation made is to ensure that the officer is qualified to take positions requiring the Navy's AQD of ACC and ACK jobs, critical and key leadership positions respectively (Navy Personnel Command, 2020).

d. Marine Corps

All uniformed officers in the Marine Corps have a bachelor's degree upon commissioning into the Marine Corps. The only other educational requirement to obtain the alternate 3006 MOS, Contingency Contracting Officer, is to attend NPS and obtain a master's degree in business administration. Marine officers are selected to attend NPS for the Contingency Contraction education via the annual Commandants career level education board. By obtaining a master's degree, all Marine Corps KOs fulfill the 24 semester hours requirement to become a member in the AC. "Officers serving in 3006 MOS are eligible for the MOS 8057, Acquisition Professional Candidate, and MOS 8058, Acquisition Management Officer, Acquisition Workforce Programs" when they have fulfilled the requirements for those MOSs (DON, 2015, p. 1-133).

3. Education Concluded

Across all the services, the formal education requirement to enter into either field, PM or CM, is the same. All uniformed officers coming into the military in the United States are required to have a baccalaureate degree. For program management, a baccalaureate degree is not required to enter the PM field, but the Core Plus standards recommend attaining one. For the position of PM, it is preferred that the baccalaureate degree be in engineering, systems management, or business administration. However, not having a baccalaureate degree in these areas does not preclude an individual officer from being a program manager. For contracting, in order to attain Level I DAWIA certification



individuals are required to have a baccalaureate degree in any field of study; there is no preference for the area of study as there is with PMs. For Level II in PM, and Level III in CM, a master's degree is required; again, PM specifies recommended studies in engineering, systems management, or business administration preference, and CM specifies business management or procurement.

For Level III certification, a PM is required to have at least 24 semester hours from among “accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management” (DA, 2020a, p. 4). Because all uniformed officers commission into the military with, at minimum, a baccalaureate degree, all uniformed officers meet the initial requirements for Level I DAWIA certification. Though not required, it is highly encouraged by all the services, to obtain a master's degree to be competitive for selection to O-5. There are several different ways to obtain a master's degree, it can be opined that as long as the individual PM or CM attain a master's degree during their career, and PMs ensure they attain the 24 semester hours in the required areas, the services have the same education standards across the board.

B. TRAINING

Anyone would be hard-pressed to make a distinction between training and education when it comes to the military colloquialism. As mentioned earlier, *training* in this thesis refers to courses that are designed to further the understanding of a uniformed military member in leadership and specific career-enhancing skills and knowledge. Several of the training requirements for the services happen in a “resident” status with a teacher and the service member as a student. However, these will not be lumped in with the education framework. Training programs are sometimes prefixed with *technical* or *advanced*. The terms technical or advanced seem to only differentiate them from training courses that have happened previously. The services all have similar breakdowns of career stages or career guideposts that determine when a training program should start or should have been completed. The guidepost, sometimes called a milestone, is there to assist the officer on when to attempt training programs or to indicate when training should have been completed.



1. Program Management

As shown in Table 5, the PM Core certification standards have three levels, which are further fragmented into either “Acquisition Training” or “Functional Training.” The three levels are in accordance with the professional experience or level of the officer. Level I is the basic or entry-level, Level II is the intermediate or journeyman level, and Level III is the advanced or senior level.

Like other DAWIA courses, there are Core Plus trainings that are desired but are not necessary for certification (see Table 6). The Core Plus training is over and beyond what is necessary, but it is essential to develop a well-rounded officer who has the potential to perform in three broad areas. The DAU created the list of courses with the purpose of identifying requirements that would be advantageous to career development and the performance in different types of assignments, such as part of an acquisitions team on a weapons system or a service contract (DAU, n.d.). The broad areas that the assignments will fall under are Weapons Systems, services, and Business Management/IT. The definition of activity that the individual will accomplish changes depending on the level of certification. For example, under a services type of assignment, a Level I representative may assist in managing the program, whereas a Level II individual would be involved in preparing and planning the program (DAU, n.d.). Subsequently, a Level III PM is responsible for coordination and organization of the program, and leads the team throughout the management of the program (DAU, n.d.).



Table 5. DAWIA Program Management Required Training for Certification. Source: DAU (n.d.).

Core Certification Standards (required for DAWIA certification)		
Training		
Level I	Acquisition Training	ACQ 101: Fundamentals of Systems Acquisition Management
	Functional Training	ENG 101: Fundamentals of Systems Engineering
		CLB 007: Cost Analysis
		CLV 016: Introduction to Earned Value Management
Level II	Acquisition Training	ACQ 202: Intermediate Systems Acquisition, Part A
		ACQ 203: Intermediate Systems Acquisition, Part B
	Functional Training	PMT 2520: Program Management Tools Course, Part I
		PMT 257: Program Management Tools Course, Part II
		CON 121: Contract Planning
		CON 124: Contract Execution
		CON 127: Contract Management
		EVM 101: Fundamentals of Earned Value Management
		ISA 1010: Basic Information Systems Acquisition
Level III	Acquisition Training	None required
	Functional Training	ACQ 315 Understanding Industry (R)
		BCF 110 Fundamentals of Business Financial Management
		ENG 201 Applied Systems Engineering in Defense Acquisition, Part I
		EVM 263 Principles of Schedule Management (R)
		LOG 104 Reliability, Availability, and Maintainability (RAM)
		*PMT 355 Program Management Office Course, Part A
		*Effective 1 Oct 2020, PMT 3550 will replace PMT 355.
		PMT 360 Program Management Office Course, Part B (R)

Table 6. Core Plus Recommended DAWIA Training for Program Management. Source: DAU (n.d.)

Core Plus Development Guide (desired training, education, and experience)				
DAWIA Cert Level	Training	Weapons Systems	Services	Business Management/IT
Level I	CLC 101: Contracting for the Rest of Us	X	X	X
	CLL 011: Performance Based Logistics (PBL)	X	X	
	LOG 100: Lif Cycle Logistics Fundamentals	X	X	
	PMT 0170: Risk Management	X	X	X
	TST 102: Fundamentals of Test and Evaluation	X		
Level II	ACQ 315: Understanding Industry (R)	X	X	X
	BCF 216: Applied Operating and Support Cost Analysis (R)	X	X	X
	CLE 004: Introduction to Lean Enterprise Concepts	X	X	X
	CLE 022: Program Manager Introduction to Anti-Tamper	X		
	CLL 006: Public-Private Partnerships	X	X	
	CLM 025: Commercial-Off-The-Shelf (COTS) Acquisition for Program Managers	X	X	X
	CLM 031: Improved Statement of Work	X	X	
	LOG 0020: Defense Logistics Agency Support to the PM	X	X	
	LOG 105: Fundamentals of System Sustainment Management	X	X	
	PQM 101: Production, Quality, and Manufacturing Fundamentals	X	X	
Level III	ACQ 265: Mission-Focused Services Acquisition		X	X
	ACQ 370: Acquisition Law	X	X	X
	BCF 209: Acquisition Reporting for MDAPs and MAIS	X		X
	CLE 008: Six Sigma: Concepts and Processes	X	X	X
	CLE 301: Reliability and Maintainability	X	X	
	CLL 022: Title 10 Depot Maintenance Statute Overview	X	X	X
	CLL 201: Diminishing Manufacturing Sources and Material Shortages Fundamentals	X	X	X
	ENG 202: Applied Systems Engineering in Defense Acquisition, Part II	X		
	ISA 320: Advanced Program Information Systems Acquisition	X	X	X
	LOG 200: Product Support Strategy Development, Part A	X	X	
	LOG 201: Product Support Strategy Development, Part B	X	X	
	LOG 204: Configuration Management	X		X
	LOG 235: Performance-Based Logistics	X	X	
	PQM 201A: Intermediate Production, Quality, and Manufacturing, Part A	X		
	TST 204: Intermediate Test and Evaluation	X		



As early as October 1, 2020, anyone assigned as a Program Executive Officer (PEO), Program Manager/Deputy Program Manager (DPM) of MDAP/MAIS, or PM/DPM of a significant nonmajor program must attend the Program Management Trainer (PMT) 4010 and PMT 4020 courses within 6 months of the assignment, as seen in Table 6. This is a unique training standard particular to these positions and only for Level III-certified personnel.

Table 7. DAWIA Program Management Unique Position Training Requirements. Source: DAU (n.d.).

Unique Position Training Standards		
Level	Type of Assignment	Additional Training Requirement
Level I-II	N/A	None
Level III	PEOs; PM/DPM of MDAP/MAIS;	PMT 4010 Program Manager's Course
	PM/DPM of significant nonmajor programs	PMT 4020 Executive Program Manager's Course

a. Army

To better prepare its PMs for a broader spectrum of exposure in the PM career field, the Army has a series of training opportunities that build on each other as the officer advances in the PM field of study. The first of the two courses is the Army Acquisition Professional Course (AAPC). The AAPC is a 9-week (but soon to be 16-week) course at the Army Acquisition Center of Excellence in Huntsville, AL, designed to provide a broad spectrum of knowledge pertaining to the acquisition process, program management, and contracting (USAASC, 2020). According to the USAASC (2020), an alternative to the AAPC is the Naval Postgraduate School's Advanced Education Program that offers a Master of Science in System Engineering Management degree through the Advanced Civil Schooling fully funded education program.

Prior to going to the final course, the senior O-3 and O-4 will attend Intermediate Level Education (ILE) and the Army Captain's Career Course (CCC). Both courses are intermediate leadership and development tracks that prepare the officer for the challenges that lay ahead not only in their career field but also in their profession as a military officer. The courses consist "of a common core of operational instruction offered to all officers, and additional education opportunities tied to the requirements" of the CM (U.S. Army Modeling and Simulation Office, n.d.). The second course is the three-week Military Education Level 4/Advanced Operations Course Intermediate Qualification Course (IQC:



USAASC, 2020). All CAP positions, by statute, are O-5 and above positions (DA, 2018), and in order to be selected to an Army CAP position or an Army Acquisitions Command, an individual must apply for and be selected to the Army Acquisition Centralized Selection List (CSL) Board (DA, 2020b).

The Army does stipulate that its PMs have certain training requirements. However, these training requirements seem to first start with formal education requirements. The formal education requirements allow the member to acquire DAWIA equivalencies while gaining a master's degree, making them eligible for the AC once they meet the experience and rank requirements.

b. Air Force

Table 8 shows that the Air Force has three different levels of training for PMs: Entry Level, Intermediate Level, and Staff and Senior Level. These levels of training cover specific years in an Air Force program manager career: entry level for the first 3 years of a PM's career, intermediate for years 4 through 9, and staff and senior level is for 10 years and beyond. The Air Force combines the Office of the Secretary of Defense (OSD) mandated certification training and recommended training for specific assignment types that support continuous learning and Air Force specific training requirements (DoAF, 2012). For Entry Level training, the Air Force focuses on acquiring knowledge and gaining competence in acquisition and program management areas (DoAF, 2012). Intermediate Level program management professionals in the Air Force are encouraged to broaden their knowledge and experience by pursuing assignments in operational exchange tours (DoAF, 2012). For example, a program manager would do a year or two in maintenance or space intelligence to understand better the intricacies of the field, which would better allow them to recognize what is needed when managing a program for that field. For the Intermediate Level officers, a large component of the training acquired over these years is leadership training, allowing the program management officer to expand their ability to manage larger programs, leading them to Acquisition Category (ACAT) Level I/II programs. Staff and Senior Level program management officers complete the training requirements that allow them to apply for entry into AC and then take on larger leadership responsibilities and fill



critical acquisition positions once they are AC members and have the required experience (DoAF, 2012).

Table 8. USAF and DAU Program Management Track. Source: DoAF (2012).

Mandatory Certification/Qualification Classes for Acquisition Program Management		School
Level I	FAM 103 Air Force Fundamentals of Acquisition Management (ACQ 101 equivalent)	AFIT
	ACQ 101 Fundamentals of Systems Acquisition Management	DAU
	SYS 101 Fundamentals of Systems Planning, Research, Development, and Engineering	DAU
	CLB 007 Cost Analysis	DAU
	CLB 016 Introduction to Earned Value Management	DAU
Level II	ACQ 201A Intermediate Systems Acquisition, Part A	DAU
	ACQ 201B Intermediate Systems Acquisition, Part B	DAU
	IPM 301 Air Force Intermediate Project Management (PMT 251 & PMT 257 equivalent)	AFIT
	PMT 251 Program Management Tools Course, Part I	DAU
	PMT 257 Program Management Tools Course, Part II	DAU
	CON 115 Contracting Fundamentals	DAU
	SAM 101 Basic Software Acquisition Management or IRM 101 Basic Information Systems Acquisition	DAU
Level III	BCF 102 Fundamentals of Earned Value Management (starting FY13, course will be listed as EVM 101)	DAU
	BCF 103 Fundamentals of Business Financial Management	DAU
	LOG 103 Reliability, Availability, and Maintainability (RAM)	DAU
	PMT 352A Program Management Office Course, Part A	DAU
	PMT 352B Program Management Office Course, Part B	DAU
	SYS 202 Intermediate Systems Planning, Research, Development, and Engineering, Part I	DAU

The Air Force has formalized its PMs training, education, and experience requirements in an Acquisition Professional Development Program (APDP) (DoAF, 2012) as shown in Table 9. The APDP tracks the DAWIA specific training requirements as well as Air Force specific leadership and training requirements, and when a program management professional needs to complete them. The APDP tracks these training requirements along with acquisition experience timelines to keep its PMs on track throughout their career.



Table 9. Air Force APDP Approximate Training Flow Chart. Source: DoAF, 2012.

Grade	Acquisition Experience	Class/Training Description
	0 - 3 Months	Complete AFIT FAM 103 initials skills course (ACQ 101 equivalent)
	2 - 12 Months	Complete SYS 101, CLB 007, and CLB 016; Complete DAU Core Plus/AFIT classes for continuous learning
	12 Months	Apply for Program Management Level I certification
	1 - 36 Months	Complete all Initial Acquisition Assignment core training tasks and those non-core tasks required by your supervisor
	12 - 18 Months	Complete ACQ 201A and ACQ 201B
	12 - 24 Months	Complete CON 115, and SAM 101 or IRM 101; Complete DAU Core Plus/AFIT classes for continuous learning
GS-11 & below	12 - 24 Months	Attend Civilian Acculturation Leadership Training (CALT)
	12 - 36 Months	Attend Acquisition Leadership Challenge Program - Beginnings (ALCP - B) (Civilians)
	18 - 24 Months	Complete AFIT IPM 301 or PMT 251 & 257; IPM 301 fulfills PMT 251 & 257
	24 Months	Apply for Program Management Level II certification
	24 - 36 Months	Complete AFIT IPM 301 if not taken to fulfill PMT 251 and PMT 257
	37 Months - 10 Years	Complete all 2nd/3rd Acquisition Assignment core training tasks and those non-core tasks required by your supervisor
O-3/GS-12		Complete Primary Developmental Education
	4 - 8 Years	Complete BCF 102, BCF 103, LOG 103, and SYS 202; Complete DAU Core Plus/AFIT classes for continuous learning
O-3 - O-4/ GS-12 - GS-13		Attend Acquisition Leadership Challenge Program I (ALCP - I)
O-4/GS-13		Complete Intermediate Developmental Education
O-5/GS-14		Attend Acquisition Leadership Challenge Program II (ALCP - II)
	8+ Years*	Complete PMT 352A and PMT 352B; Apply for Program Management Level III certification
	Job Specific	If assigned to an ACAT III PM position, complete PMT 400 if applicable
O-5/GS-14		Attend Acquisition Leadership Challenge Program III (ALCP - III)
O-5 - O-6/ GS-14 - GS-15		Complete Senior Developmental Education; Apply for PMT 401 nomination for development towards ACAT I/II PM/DPM positions
	Job Specific	If assigned as ACAT I/II PM/DPM, complete PMT 401 if not already completed; Complete PMT 402 (prerequisites: PMT 401, PMT 301, or PMT 302)

c. Navy

Training for the Program Manager is structured to align with an officer's career stage based upon the officer's career progression timeline. The typical career progression for an officer is

- Basic Technical Development and Leadership (O1-O3)
- Advanced Technical Proficiency and Leadership (O3-O5)
- Senior Officer Development and Leadership (O5+)

This typical career progression may not apply to everyone. It also depends on the availability of training and the willingness or maturity of the officer to possibly seek the training earlier than expected.



The GAO (2018), in GAO-18-217, highlighted three best training practices for the Navy Program Manager. Practice #1 is to have training classes that allow PMs to share experiences. The DAU offers some classes that are in residency and require the students to share their knowledge with others. Practice #2 is to offer rotational assignments. The GAO report states that the Navy is only partially aligned with this best practice. It is typical for Navy personnel to rotate from position to position and from shore-to-sea and back to shore positions. Unfortunately, the rotations are not always in the same career field. Training in the PM career field at one job may not be applicable in the next position. Not having the steady rotation into different positions that still offer another facet of the PM field hinders the officer's opportunity to gain valuable leadership experience and a broader perspective of the career field. Practice #3 is to have on-the-job training (OJT) and information repositories. The Navy is fully aligned with this practice according to the GAO-18-217 report. The Navy has established a community of practice and networking groups to share knowledge.

d. Marine Corps

A Marine Corps PM will gain their DAWIA certifications and begin their career in this field from their very first assignment, as seen on Figure 15. While on their first assignment, the DAWIA certification required for an 8057 MOS are Level I and II in their primary acquisition career field (DoN, 2015). They follow the most current DAU course requirements to achieve these certifications. When advancing to the 8058 MOS, the first requirement is to be a Major, and that is when the PM will apply for membership as an AC member.



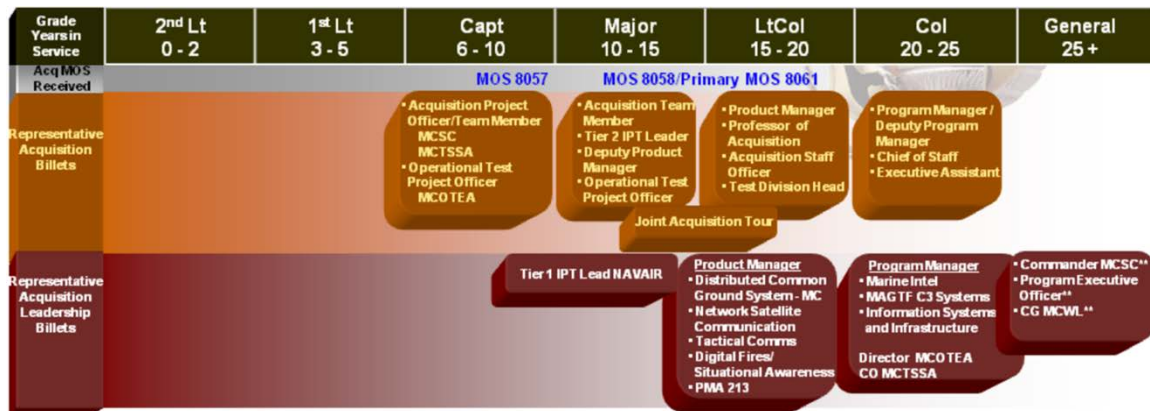


Figure 15. Marine Corps Program Management Career Training Requirements. Adapted from Marine Corps Systems Command (n.d.-c).

2. Contract Management

Compared to program management, there are quite a few more DAU training requirements and recommended training courses, for contract management. In contract management, there are 10 types of assignments, see Table 10, compared to the three types for PMs, which may account for the larger variety of recommended training. In the required functional training area for KOs, the training is progressive, see Table 11 through Table 13, meaning all functional training for Level I needs to be completed before advancing to any functional training for Level II, and so forth. There are also some unique training courses listed in Table 14, for certain positions for which KOs hold. Specifically, if a KO is assigned to MDAP/MAIS programs at all levels of DAWIA certification, and for Level II and III certification in contract cost and price analyst job positions, there are additional training courses that KOs need to complete.



Table 10. DAWIA Contracting Assignment Type Descriptions. Source: DAW (n.d).

CERTIFICATE STANDARDS & CORE PLUS DEVELOPMENT GUIDE CONTRACTING LEVEL I-III	
Type of Assignment	Representative Activities
1. Operational Contracting	Contracting functions in support of post, camp or stations
2. Research and Development	Contracting functions in support of research and development
3. Systems Acquisition	Contracting functions in support of systems acquisition to include all ACAT programs
4. Logistics and Sustainment	Contracting functions performed by the Defense Logistics Agency or by other offices to sustain weapon systems
5. Construction Architecture & Engineering	Contracting functions in support of construction and/or architect and engineering services
6. Contingency/Combat Ops	Contracting functions performed in a contingency or combat environment
7. Contract Admin Office	Contracting function is primarily focused on contract administration
8. Contract Cost/Price Analyst	Contracting function is primarily focused on advanced cost/price analysis
9. Small Business Specialist	Contracting function is primarily focused on advising small businesses or on strategies for maximizing use of small businesses
10. Other	Contracting functions that perform a variety of assignments or are at a headquarters, secretariat, or OSD



Table 11. DAWIA Contract Management Core Required Training for Certification. Source: DAU (n.d.).

Core Certification Standards (required for DAWIA certification)		
Training		
Level I	Acquisition Training	None Required
	Functional Training	CON 091 Contract Fundamentals
		CON 121 Contract Planning
		CON 100 Shaping Smart Business Arrangements
		CON 124 Contract Execution
		CON 127 Contract Management
		CON 170 Fundamentals of Cost and Price Analysis (R)
		CLC 033 Contract Format and Structure for DoD e-Business Environment
		CLC 056 Analyzing Contract Costs
		CLC 057 Performance Based Payments and Value of Cash Flow
		CLM 059 Fundamentals of Small Business for the Acquisition Workforce
		CLC 058 Introduction to Contract Pricing
Level II	Acquisition Training	ACQ 1010 Fundamentals of Systems Acquisition Management
	Functional Training	CON 200 Business Decisions for Contracting
		CON 216 Legal Considerations in Contracting
		CON 280 Source Selection and Administration of Service Contracts
		CON 290 Contract Administration and Negotiation Techniques in a Supply Environment
		CLC 051 Managing Government Property in the Possession of Contractors
		HBS 428 Negotiating
Level III	Acquisition Training	ACQ 202 Intermediate Systems Acquisition, Part A
	Functional Training	CON 360 Contracting for Decision Makers (R)
		1 additional course from the Harvard Business Management Modules
		Elective Requirement. Select one of the below courses:
		- ACQ 265 Mission-Focused Services Acquisition
		- ACQ 315 Understanding Industry
		- ACQ 370 Acquisition Law
		- CON 244 Construction Contracting
		- CON 252 Fundamentals of Cost Accounting Standards
		- CON 320 Advanced Indirect Cost Analysis
		- CON 370 Advanced Cost and Price Analysis
		- CON 334 Advanced Contingency Contracting Officer's Course



Table 12. DAWIA Contract Management Core Plus Recommended Training for Certification (Level I). Source: DAU (n.d.).

Core Plus Development Guide (desired training, education, and experience)											
DAWIA Cert Level	Training	Type of Assignment									
		1	2	3	4	5	6	7	8	9	10
Level I	CLC 003 Sealed Bidding	X			X	X					
	CLC 004 Market Research	X	X	X	X	X	X	X	X	X	X
	CLC 005 Simplified Acquisition Procedures	X	X	X	X	X	X	X		X	X
	CLC 009 Service-Disabled, Veteran-Owned Small Business Program	X	X	X	X	X	X	X		X	X
	CLC 020 Commercial Item Determination	X	X	X	X	X	X	X	X	X	X
	CLC 024 Basic Math Tutorial	X	X	X	X	X	X	X	X		X
	CLC 028 Past Performance Information	X	X	X	X	X	X	X		X	X
	CLC 030 Essentials of Interagency Acquisitions/Fair Opportunity	X	X	X	X	X	X	X	X	X	X
	CLC 043 Defense Priorities and Allocations System	X	X	X	X	X	X	X		X	X
	CLC 045 Partnering	X	X	X	X	X	X	X			X
	CLC 046 DoD Sustainable Procurement Program	X	X	X	X	X	X	X	X	X	X
	CLC 054 Electronic Subcontracting Reporting System (eSRS)	X	X	X	X	X	X	X	X	X	X
	CLC 055 Competition Requirements	X	X	X	X	X	X	X	X	X	X
	CLC 060 Time and Materials Contracts	X	X	X	X	X	X	X	X	X	X
	CLC 062 Intra-Governmental Transactions	X	X	X	X	X	X	X	X	X	X
	CLC 113 Procedures, Guidance, and Information	X	X	X	X	X	X	X	X	X	X
	CLC 132 Organizational Conflicts of Interest	X	X	X	X	X	X	X	X	X	X
	CLG 0010 DoD Governmentwide Commercial Purchase Card Overview	X	X	X	X	X	X	X	X	X	X
	CLM 023 DAU AbilityOne Training	X	X	X	X	X	X	X	X	X	X
	CON 237 Simplified Acquisition Procedures	X	X	X	X	X	X	X		X	X
	CON 243 Architect-Engineer Contracting (R)					X					
	CON 244 Construction Contracting (R)					X					
	LOG 100 Life Cycle Logistics Fundamentals		X	X	X				X		X
	LOG 105 Fundamentals of System Sustainment Management		X	X	X				X		X
	SPS 101 Standard Procurement System and federal Procurement Data System -- Next Generation User	X	X	X	X	X	X	X	X	X	X



Table 13. DAWIA Contract Management Core Plus Recommended Training for Certification (Level II-III) Cont. Source: DAU (n.d.).

Core Plus Development Guide (desired training, education, and experience)											
DAWIA Cert Level	Training	Type of Assignment									
		1	2	3	4	5	6	7	8	9	10
Level II	CLC 006 Contract Terminations	X	X	X	X	X	X	X			X
	CLC 008 Indirect Costs		X	X				X	X		X
	CLC 013 Services Acquisition	X	X	X	X	X	X	X	X		X
	CLC 026 Performance-Based Payments Overview	X	X	X	X	X	X	X	X	X	X
	CLC 027 Buy American Statute	X	X	X	X	X	X	X	X	X	X
	CLC 031 Reverse Auctioning	X			X						
	CLC 039 Contingency Contracting Simulation: Barda Bridge						X				
	CLC 040 Predictive Analysis and Scheduling			X				X			X
	CLC 041 Predictive Analysis and Systems Engineering		X	X				X			X
	CLC 042 Predictive Analysis and Quality Assurance			X				X			X
	CLC 044 Alternative Dispute Resolution	X	X	X	X	X	X	X			X
	CLC 047 Contract Negotiation Techniques	X	X	X	X	X	X	X	X	X	X
	CLC 059 Management of Subcontracting Compliance	X	X	X	X	X	X	X		X	X
	CLC 066 Other Transactions (OTs)		X	X				X			
	CLC 103 Facilities Capital Cost of Money	X	X	X	X	X	X	X	X		X
	CLC 104 Analyzing Profit or Fee	X	X	X	X	X	X	X	X		X
	CLC 107 OPSEC Contract Requirements	X	X	X	X	X	X	X			X
	CLC 108 Strategic Sourcing Overview	X	X	X	X	X	X	X	X	X	X
	CLC 110 Spend Analysis Strategies	X	X	X	X	X	X	X	X	X	X
	CLC 112 Contractors Accompanying the Force	X	X	X	X	X	X	X			X
	CLC 114 Contingency Contracting Officer Refresher						X				
	CLC 120 Utilities Privatization Contract Administration							X			
	CLC 125 Berry Amendment	X		X	X	X	X	X			X
	CLL 011 Performance Based Logistics (PBL)	X	X	X	X				X		X
	CLM 031 Improved Statement of Work	X	X	X	X	X	X				
	CLM 040 Proper Financial Accounting Treatments for Military Equipment	X	X	X	X	X	X	X	X		X
	CLM 200 Item-Unique Identification	X	X	X	X	X	X	X	X	X	X
	CON 0070 Source Selection	X	X	X	X	X	X	X	X	X	X
	CON 234 Joint Contingency Contracting Course (R)						X				
	CON 252 Fundamentals of Cost Accounting Standards (R)		X	X				X	X		
	CON 320 Advanced Indirect Cost Analysis (R)		X	X				X	X		
	GRT 201 Grants and Agreements Management (R)		X					X			
	HBS 433 Presentation Skills	X	X	X	X	X	X	X	X	X	X
	HBS 440 Team Leadership	X	X	X	X	X	X	X	X	X	X
	HBS 441 Team Management	X	X	X	X	X	X	X	X	X	X
	LOG 235 Performance-Based Logistics	X	X	X	X				X		X
	PMT 0130 Work-Breakdown Structure			X				X	X		
	SBP 101 Introduction to Small Business Programs, Part A									X	
Level III	BFM 0040 Budget Policy			X							
	CLB 007 Cost Analysis	X	X	X	X	X	X	X	X		X
	CLL 001 Life Cycle Management & Sustainment Metrics			X	X						X
	CLV 016 Introduction to Earned Value Management			X		X		X			
	EVM 101 Fundamentals of Earned Value Management			X				X			
	HBS 309 Coaching For Results	X	X	X	X	X	X	X	X	X	X
	HBS 406 Coaching	X	X	X	X	X	X	X	X	X	X

Table 14. DAWIA Contract Management Unique Position Training Requirements. Source: DAU (n.d.).

Unique Position Training Standards		
Level	Type of Assignment	Additional Training Requirement
Level I	MDAP/MAIS program	ACQ 101 Fundamentals of Systems Acquisition Management
Level II	Contract Price and/or Cost Analysts	CON 270 Intermediate Cost and Price Analysis (R)
	MDAP/MAIS program	ACQ 202 Intermediate Systems Acquisition, Part A
Level III	Contract Price and/or Cost Analysts	CON 370 Advanced Cost and Price Analysis (R)
	MDAP/MAIS program (at least 50% of the time)	ACQ 203 Intermediate Systems Acquisition, Part B (R)



a. Army

The Army's contract management professional training mirrors the Army's PM professional training track. There is, however, an additional course called the Army Intermediate Contracting Course (AICC) that is taken after the AAPC. The AICC is a four-week intermediate contracting course that emphasizes Army doctrine and Army-unique system acquisition procedures and organizations throughout its curriculum (USAASC, 2020). The CM track still has the requirement to attend ILE and CCC by the senior O-3 and O-4 rank levels, followed by the 3-week Military Education Level 4/Advanced Operations Course Intermediate Qualification Course (IQC: USAASC, 2020).

b. Air Force

KOs in the Air Force focus their training toward qualification. This means that they focus on demonstrating proficiency in the core and non-core tasks listed on each individual's Master Task List (MTL) from their individual training plan (ITP), including anything specific that might be on their unit contracting officer requirements (DoAF, 2014). During their first assignment, Air Force KOs get assigned to a 64P1 position, and within the 36 months they are at this assignment, they must complete all core and non-core tasks that are identified in their individual and unit MTL. Once they have at least 12 months of experience, they can receive the qualified AFSC designation of 64P3. On their second contracting tour, Air Force KOs "must demonstrate proficiency on all ITP designated tasks/competencies no later than 36 months from assignment to that unit" (DoAF, 2012, p. 17). Continuing their career progression,

In their third or subsequent assignments should demonstrate proficiency on any tasks/competencies determined necessary by their commander/director. ...ITPs are at the discretion of the commander/director once the officer has completed one assignment in operational contracting and one assignment in systems acquisition. (DoAF, 2014, p. 18)

Air Force KOs are also required to complete and maintain Continuous Learning training requirements that are in line with the APDP.



c. Navy

Training courses for the Navy's Contracting Management specialty is provided via DAU. There are three ways that an officer can qualify for certification, (a) take DAU courses, (b) take courses at universities that have been granted equivalencies for DAU courses, and (c) complete DACM awards fulfillment (DoN, 2019a).

Course fulfillment provides a means for AWF members to receive credit for DAU courses for which they demonstrate competency through an assessment of their previous work experience, education, training, or any combination thereof. Fulfillment is only available to persons serving in a coded acquisition billet or position. Command DPDs will establish a fulfillment process, in accordance with the DAU Fulfillment Guide, to ensure that applicants meet the learning objectives of the DAU course and provide adequate justification. Command fulfillment processes must be approved by the DACM prior to implementation. (DON, 2019a, p. 18)

The DAU courses provide a means for CMs to receive credit for DAU courses for which they demonstrate competency through an assessment of their previous work experience, education, training, or any combination thereof (DoN, 2019a). This awarding of DAU course fulfillment would apply to all DAU courses that have been granted equivalencies through other universities.

d. Marine Corps

After attending NPS, where 3006s gain DAU course equivalencies, the CMs get stationed in a contracting billet where they work with specialists for six months to a year, learning the systems and writing contracts. At their first acquisition billet, is where the 3006s will gain their Level I and II DAWIA certifications. After this, they are most likely be sent back to serve a tour in their primary MOS while completing continuing education requirements to maintain their certifications. In some instances, they do back-to-back assignments in an acquisition billet, but not very often.

3. Training Concluded

The training for the PM and CM is guided by directives provided by the Office of the Under Secretary of Defense for Acquisition and Sustainment as stated in DOD Instruction 5000.66. By direction from the USD(A&S) and ASD(A), the President of DAU



serves as the Chief Learning Officer of the DoD acquisition community by developing and delivering learning assets that address competencies identified by the Functional Leads (DoDI 5000.66). The designation of DAU as the central location of functional training provides a consistent or standard metric whereby all services can develop training programs without reinventing the wheel. There is clearly no distinction between the services on what courses are required to obtain a particular certification, and there are no outliers on what is seen as beneficial in certain functional assignments.

However, it is said of many military instructions, “you can add to, but never take away.” It is discovered that the services take the required and suggested course training very seriously, but some have found that it may not be enough. For instance, the Air Force and Army have extraneous courses that tend to either prove what was previously learned can be duplicated in actual assignments (in the case of the Air Force MTL) or ensure the officer will be able to handle higher levels of leadership obligations (in the case of the Army ILE and CCC). These extra training courses are more for the benefit of the officer than for the sake of a certification and tend to set an officer up for success rather than failure. The downside to these courses is that it is time taken away from an officer’s getting started on higher level courses, but again, this is a risk and reward scenario. The Army and Air Force consider that with more mature and self-confident leaders who have gone through rigorous training in preparation for the next assignment, the risk of subpar performance would be lower and there would be rewards of quality and effectiveness.

C. EXPERIENCE

The assignment process has three characteristics that will be in the mind of the officer and the detailing official: (a) the needs of the service, (b) the career needs of the officer, and (c) the personal desires of the officer (OSCP, 2011). These characteristics are not weighted equally. Some individuals give more credence to personal desires and forego jobs that could be beneficial to building experience in their career fields, whereas sometimes an individual officer is not given the choice because of the needs of the service, and they miss out on jobs that would benefit their career experiences. Some may focus on their career experience with the understanding that their personal lives (family, friends, education) may be negatively impacted. All these dynamics may impact the guiding



principles of laying out the career plan to gain experience. Understanding the statutory requirements for an officer to gain experience at the various levels may help them stay on track to achieve the maximum experience required.

1. Program Management

The experience of the PM is essentially the experience of the AWF, meaning that PM's background is not tied to one field, but PMs are encouraged to have several experiences in several acquisition fields (e.g., contracting, engineering, supply chain management, etc.) throughout their career. If a position held outside the acquisition field broadens the acquisition scope of the PM, then the officer will receive credit towards their PM career milestones. The Core and Core Plus requirements for DAWIA certification are followed by all services, as the DAWIA certification is the military's standards for involvement as a PM. These Core and Core Plus requirements for program management are listed in Table 15. On top of DAWIA requirements, each Service necessitates a slightly different requirement from their uniformed PM officers.

Table 15. DAWIA Program Management Core and Core Plus Experience Requirements. Source: DAU (n.d.).

PM Core Certification Standards (required for DAWIA certification)	
	Experience Requirement
Level I	1 year of acquisition experience with cost, schedule, and performance responsibilities
Level II	2 years in program management with cost, schedule, and performance responsibilities
Level III	4 years in program management with cost, schedule and performance responsibilities
	At least 2 years in a program office for system development and acquisition or similar organization (dedicated matrix support to a PM, PEO, DCMA program integrator, or supervisor of shipbuilding). These two years may run concurrent with the preceding 4 year requirement.
	OR
	Level III DAWIA certification in another acquisition functional
	2 years in program management with cost, schedule and performance responsibilities
	2 years in a program office for system development and acquisition or similar organization (dedicated matrix support to a PM, PEO, DCMA program integrator, or supervisor of shipbuilding). These 2 years may run concurrent with the preceding Level III or 2 year requirements.
PM Core Plus Development Guide (desired training, education, and experience)	
	Experience Recommendation
Level I	One (1) acquisition experience (in addition to core certification experience)
Level II	2 additional years acquisition experience, preferably in a systems program office or similar organization
Level III	2 additional years of acquisition experience, preferably in a systems program office or similar organization (in addition to core certification experience)



a. Army

The goal for Army PMs is to gain a wide range of experiences leading up to their O-6 Centralized Selection List (CSL) PM assignment (DA, 2020a). The range of functionalities the Army encourages its PMs to branch into includes science and technology, test and evaluation, and contracting (if the timeline of their career allows) (DA, 2020a). The Army leadership development focuses on three domains: institutional training and education, assignments, and self-development, which shapes officer development throughout career progression (DA, 2020a). The assignments and self-development domains contribute to the growth of the PMs experience in their field. Army “officers should balance assignments in order to gain a breadth and depth of operational and broadening experience across a variety of organizations and environments” (DA, 2020a, p. 3). The Acquisition Management Branch, which manages the FA 51 Army officers, provides career development through schooling and assignment opportunities (DA, 2020a).

The Army segments its career development model into three areas: functional experience, broadening experience, and strategic experience (DA, 2018) as shown on Figure 16. Functional experience is where an officer gains experience in a single Career Field related to acquisition and works towards AAC membership (DA, 2018). Functional experience is usually gained during a first acquisition assignment while the PM is a Captain. Broadening experiences for an Army PM are where they “build multi-skilled leadership competencies through education, training, and experience” (DA, 2018, p. 138). The Strategic Leadership positions occur while the PM is a Major and is where the officer applies the acquired leadership and job-related competencies in senior leadership positions (DA, 2018). The strategic leadership positions will be filled by O-5 and O-6 Army PMs and are CAPs which can be filled by acquisition officers of either a primarily program management or contracting background (DA, 2018). To fill a CAP Army PMs go through a board selection process, called the Centralized Selection List (CSL), which identifies and selects the best qualified officers to lead the most critical acquisition organizations (DA, 2020). Figure 16 shows the pyramid of the Army Acquisition Officer career development model.



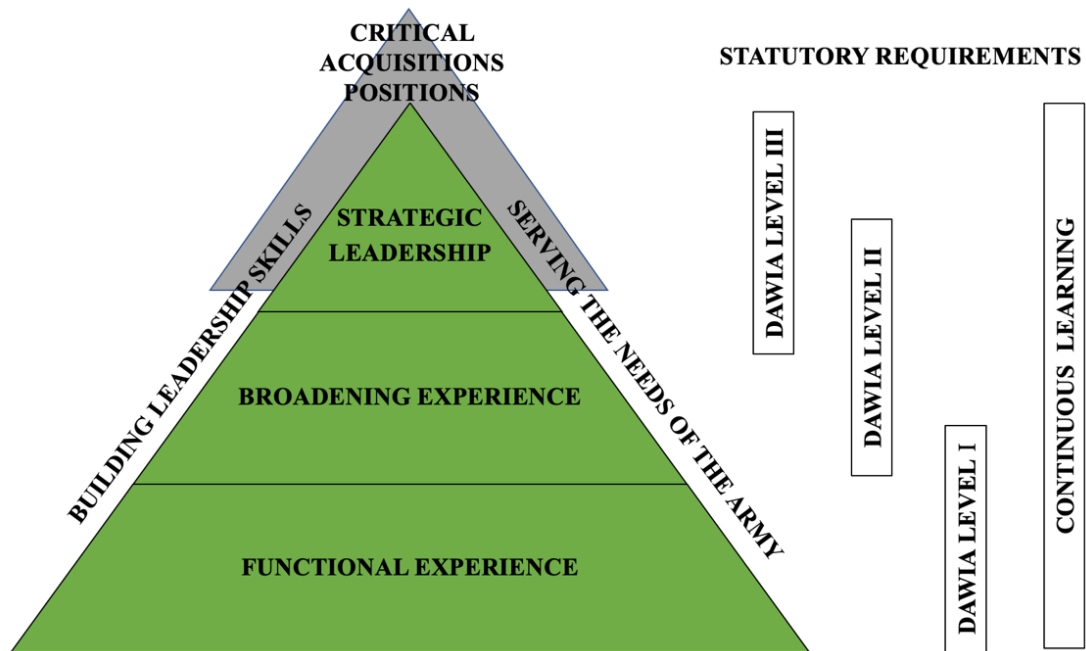


Figure 16. Army Acquisition Career Development Model. Source: DA (2018).

b. Air Force

As discussed in the program management training section, the APDP monitors the Air Force's program management officers' training, education, and experience requirements. The experience is tracked by the time a program management officer spends in an acquisition position. The first assignment for a program management officer in the Air Force is usually as a project officer, where they work under a more experienced program manager. The project officer can be assigned a specific task or be assigned to manage a smaller portion of a larger project (DoAF, 2012). For the second acquisition assignment, an Air Force PM is assigned as a project manager with greater responsibility. The second assignment focuses on team leadership and communication development. This is where a program management professional learns to ensure that all members of the team get the information they need and develops cross-functional integration by "trading off the legitimate demands of the various functions to optimize the overall project" (DoAF, 2012, p. 26). The Air Force encourages its PMs to take other positions between their acquisition ones to gain experience in different fields and increase their experience in other aspects of the Air Force. This broadening of experience can be accomplished by crossing into another

acquisition field, such as finance, logistics, or contracting (DoAF, 2012). Air Force PMs' third acquisition assignment generally place them into positions on larger projects, which increases their interaction with higher headquarters, the OSD, and even possibly Congress (DoAF, 2012).

c. Navy

As mentioned previously, the AWF has three designators that a Program Manager in the Navy must be identified as for coding and appropriate personnel data accountability. The three designators are Non-Critical Acquisition Positions, Critical Acquisition Positions, or Key Leadership Positions. The summation of these positions is the total AWF. DoD AWF positions are positions that include acquisition functions, as defined in DoDI 5000.66, dated 27 July 2017, as the predominant (i.e., greater than 50%) duty in a specific Career Field (OUSD[A&S], 2019). The >50% criteria determine who is counted in the AWF, acquisition training priority, and eligibility for certification and AC membership according to the DON DAWIA Operating Guide.

Table 16 specifically breaks out the statutory requirements for the PM. The Program Executive Officer is the most senior position a PM can hold. Note that in order to obtain this position, the officer must have 10 years of acquisition experience in an AWF position and at least 4 years assigned to a CAP. Gaining 10 years in a particular career field could be challenging for a naval officer. It must be considered that officers, such as RL, are only in a coded billet for a few years (no more than 32 months on average, but there are 36-month waivers for CAPs). To accumulate 10 years of experience in one career field may require as many as five tours in coded billets. There is no guarantee that this is achievable even with the most detailed and stringent personal career path track for the naval officer. However, the accumulation of the experience does not have to be consecutive. The years are counted as training requirements and tenure times are completed.



Table 16. Program Management Statutory Position Requirements. Source: DON (2019).

Position	Statutory Program Management Requirements
PEO, DPEO/ED, DRPM & DDRPM	<ul style="list-style-type: none"> - 10 years acquisition experience in an AWF position, at least 4 years assigned to CAP. - Served as a PM or DPM. - Complete PMT 401 and PMT 402 as PM/DPM within 6 months of tenure start date. - Tenure period for PEOs and DPEOs is 3 years or as tailored. Tenure period for DRPMs is 4 years. Written tenure agreements required for this position with copy submitted to DACM.
PM for Major Defense Acquisition Programs (MDAPs)	<ul style="list-style-type: none"> - 8 years acquisition experience with at least 2 years in a program office or similar organization. - Complete PMT 401 and PMT 402 within 6 months of tenure start date. - Tenure period: <ul style="list-style-type: none"> • Program Manager for ACAT I or IA program assigned before Milestone B will be assigned at least through Milestone B approval. • ACAT I or IA Program Manager assigned immediately following Milestone B approval will be assigned until initial operational capability is achieved. • Program Managers outside of these periods assigned for at least 4 years or until completion of the phase that occurs closest in time to 4-year tenure period. - Written tenure agreements required for this position with copy submitted to DACM.
DPM for MDAPs	<ul style="list-style-type: none"> - 6 years acquisition experience, with at least 2 years in a program office or similar organization. - Complete PMT 401 and PMT 402 within 6 months of tenure start date. - Tenure period: 4 years or closest to next major milestone. - Written tenure agreements required for this position with copy submitted to DACM.
PM and PIM* for Significant Non-Major Programs PM of MPM-Eq*	<ul style="list-style-type: none"> - 6 years acquisition experience. (Desire at least 2 years in a program office or similar organization.)* - Complete PMT 401 and PMT 402 within 6 months of tenure start date. - Tenure period: 3 years. - Written tenure agreements required for this position with copy submitted to DACM.
DPM and DPIM** for Significant Non-Major Programs DPM of MPM-Eq	<ul style="list-style-type: none"> - 4 years acquisition experience. - Complete PMT 401 and PMT 402 within 6 months of tenure start date. - Tenure period: 3 years. - Written tenure agreements required for this position with copy submitted to DACM.
Note: *MPM-Eq requires 4 years of experience vice 6 years. **USMC PIMs and DPIMs are equivalent to ACAT II PMs and DPMs in the DON; positions not specifically addressed in statute, but statutory requirements apply.	

The DoN DAWIA Operating Guide provides a caveat for URL officers to have up to 18 months of acquisition-related experience credited for the same amount of time in an O-5 or O-6 command tour (Commanding Officer time only) when responsibilities demonstrate program management competencies such as planning, execution, business acumen, resource management, and interface with the materiel establishment(s). This credit may be applied to experience requirements for PM certification and AC membership.



d. Marine Corps

By the time a Marine Corps PM achieves the MOS of 8058, they will already have achieved at least 4 years of acquisition experience and achieved a minimum of Level II DAWIA certification. Once they obtain the Level III DAWIA certification they can apply to become a member of the AC and get assigned the primary MOS of 8059, Aviation Acquisition Management Professional, or 8061, Ground Acquisition Management Professional (DoN, 2015). The distinction between these two primary acquisition MOSs is the type of programs they will support as a PM: aviation or ground systems. While an 8058, a PM can still rotate back to the fleet to fulfill a role under their original, primary MOS, but once assigned a primary MOS in acquisitions, they will remain in that role for the remainder of their career. Assignment to the acquisition management professional's primary MOS is "based on selection by a board of eligible candidates" (DoN, 2015, p. 1-236). Those who maintain the MOS 8058 can still serve in acquisition billets; however, they can rotate back and forth between acquisition billets and non-acquisition billets. A recommended career roadmap, with listed billets that an PM should hold at each stage of their career is presented in Figure 17.



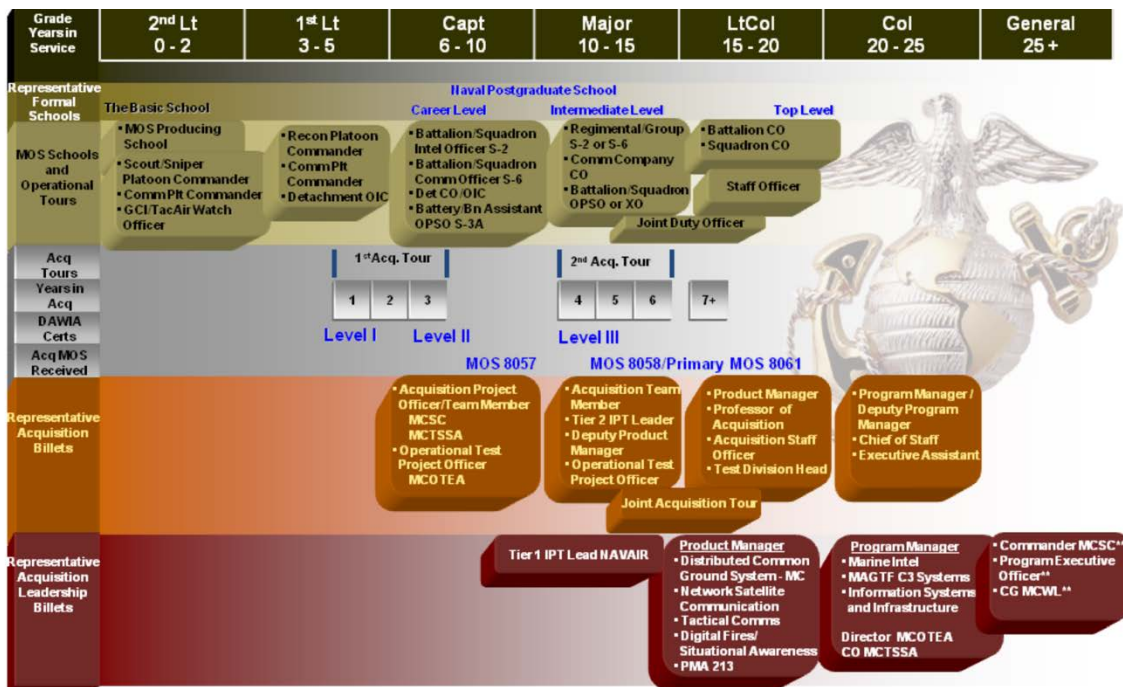


Figure 17. Marine Corps Program Management Career Roadmap. Source: Corps System Command (n.d.-c)

Acquisition Management Professionals are required to meet the following list of requirements:

- Must be a Major or higher
- Must be certified to Level II in primary acquisition career field. Career field certification requirements are contained in the current edition of the Department of the Navy Acquisition Workforce Improvement Act Operating Guide.
- Must have at least three years of experience in designated acquisition positions with the DoD. (DoN, 2015)

There is also the additional requirement for the candidate for the primary MOSs to be an unrestricted officer, meaning “an individual in the Marine Corps in the grade of Second Lieutenant or above,” who is not a restricted officer (DoN, 2006, p. 1-14). For the Aviation Acquisition Management Professional there is the additional restriction that the unrestricted officer be from the occupational field of 75, which is a pilot.

2. Contract Management

The requirements for KOs are simpler than for PMs. Core requirements for DAWIA certification is just a number of years in contracting positions, dependent upon the level of



certification. For Core Plus Development starting at Level II, the only recommendation is to have double the amount of years' experience in contracting positions to attain a better understanding of the field. The specific Core and Core Plus requirements are listed in Table 17. The different services have different methods of tracking experience and different guides for officers on how to achieve the best experience for their continued careers. All the services ensure that the DAWIA certification experience requirements are met, but they differ in their approach and direction of guidance they give their uniformed acquisition officers. Of the three categories of training, education, and experience, experience is where the four services differ the most.

Table 17. DAWIA Contracting Experience Requirements. Source: DAU (n.d.).

CM Core Certification Standards (required for DAWIA certification)	
	Experience Requirement
Level I	1 year of contracting experience.
Level II	2 years of contracting experience.
Level III	4 years of contracting experience

CM Core Plus Development Guide (desired training, education, and experience)	
	Experience Recommendation
Level I	None Specified
Level II	Two (2) additional years of contracting experience
Level III	Four (4) additional years of contracting experience

a. Army

The Army Acquisition Corps guidance states that the Contracting, FA 51C, assignments focus the ability to lead “teams that enable the Army Contracting Command (ACC) to provide contracting support worldwide to expeditionary operations throughout the entire spectrum of military operations” (DA, 2020a, p. 2). The guide goes on to say these officers will lead contracting teams, contracting efforts for installations, military construction, and weapon systems procurement. They also “execute contract awards, contract administration, and provide industrial management or oversight at contractor facilities worldwide” (DA, 2020a, p. 2). “Officers coordinate the appropriate contracting action with the supported warfighter or program manager to address requiring activity needs” (DA, 2020a, p. 2). The Contract Management officers for the Army “are responsible for making determinations on contract awards and supporting the development of



acquisition plans and instructions” (DA, 2020a, p. 2). Positions that have “a contracting focus may include contracting support to the warfighter, assisting contract support planning at all levels of Army operations, systems and service contracting in major purchasing commands” (DA, 2020a, p. 2).

The Army Acquisition Corps Pamphlet 600-3 mentions other positions and responsibilities of the FA 51C:

Other AOC C positions are located within United States Army Corps of Engineers (USACE), Defense Contract Management Agency (DCMA) and Defense Logistics Agency (DLA). Duties may include determining best contract types and agreements, negotiating contract terms and conditions; obligating funds; awarding contracts; leading post award actions; monitoring performance and production; providing contract surveillance; performing risk analysis; and advising warfighters, program managers, and industry. (DA, 2020a, p. 2)

b. Air Force

Over the course of an Air Force contracting officer’s career, the Air Force encourages and guides their contracting career by having the KO gain experience in three principle elements of the career field: operational contracting, systems acquisition and sustainment, and contract administration (DoAF, 2014, p. 20). By doing this the Air Force ensures that a KO is well rounded in the fundamentals of contracting and understands how to work with contracts at each stage. “Each element plays a key role in the success of the Air Force mission and helps develop officers in the contracting career field as future air and space leaders” (DoAF, 2014, p. 20).

The Air Force also separates its levels of contracting into tactical, operational, and strategic. Tactical level KOs are considered Buyers/Administrators, operational KOs are either Commanders, Supervisors, or Staff Officers, and the strategic level KOs are considered Strategic Leaders. Each of the levels have certain competencies that the KO should gain experience in to fully understand the aspects of becoming a competent KO at that level. At each level, there are different occupational competencies that are desired for successful KOs.

“The tactical level is further subdivided into the entry and intermediate levels and provides the foundational contracting experience that 64P officers will rely on throughout



their career” (DoAF, 2014, p. 21). At the tactical level, KOs “learn and master basic contracting competencies,” those competencies are listed in Figure 18 (DoAF, p. 21). The tactical level is where KOs “develop foundational business knowledge and skills upon which they can build a successful contracting career” (DoAF, 2014 p. 21). At the tactical level, KOs serve in positions at varied buying commands, as KOs for contract administration, KOs for deployments, and potentially as a Contracting Team Lead.

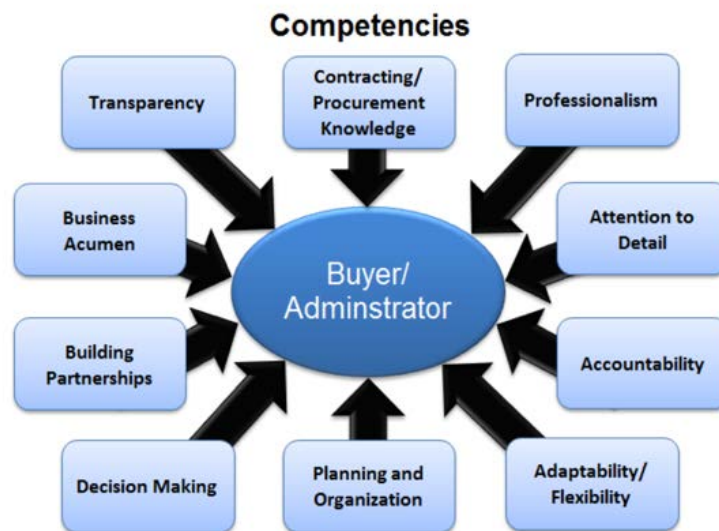


Figure 18. Tactical Level Sight Picture for Buyers/Administrators. Source: DoAF (2014).

At the operational level, KOs “transition from being a specialist to learning more complex contracting skills and functional competencies while gaining a breadth of experience” (DoAF, 2014, p. 28). The operational level is where KOs complete their APDP Level III contracting certification requirements and are considered business advisors and subject matter experts in contracting (DoAF, 2014). Here is where “individuals should gain experience in supervisory positions, squadron command, staff positions, joint positions, and career broadening opportunities outside the career field” (DoAF, 2014, p. 28). At the operational level, KOs work at Joint or Operational Contracting Support commands, Systems, Sustainment, or Specialized Buying commands or career broadening commands. KOs at the Operational level can also serve as squadron commanders, Materiel Leaders, or as DCMA commanders. The competencies that an operational level KO should focus on are listed in Figure 19.



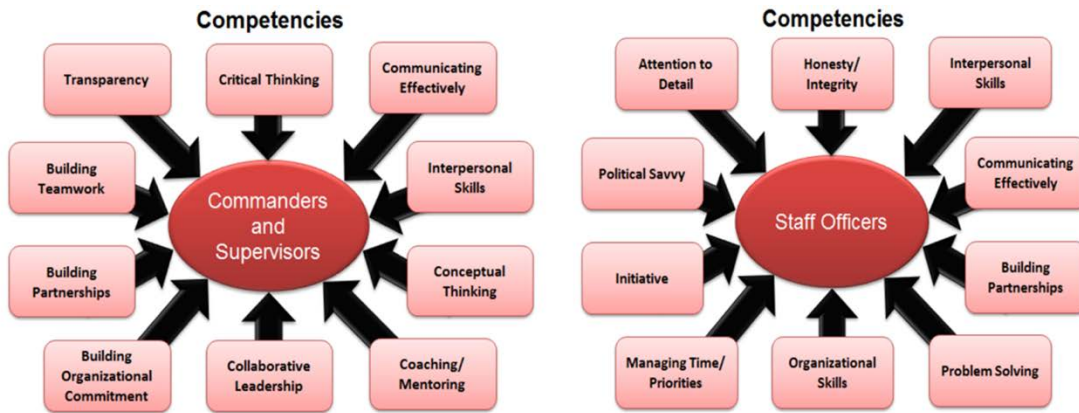


Figure 19. Operational Level for Commanders, Supervisors, and Staff Officers. Source: DoAF (2014).

The strategic level is usually reserved for KOs with more than 20 years of contracting experience, and carries significant responsibility and authority (DoAF, 2014). “At the strategic level, individuals will combine highly developed functional and enduring competencies and apply broad professional leadership capabilities” (DoAF, 2014, p. 34). At the rank of colonel and above, the operational level focuses on leading and directing complex and multi-tiered contracting operations, as seen in Figure 20. Operational KOs hold positions such as Senior Leader in Systems Contracting, Senior Materiel Leader, DCMA Commander, or commander of various higher-level Air Force Contracting Commands.



Figure 20. Strategic Level Sight Picture for Strategic Leaders. Source: DoAF (2014).

c. Navy

The Contracting Manager, much like the PM, has statutory requirements for the naval officer to be permitted in certain positions (see Table 18). As stated previously, the Navy assigns sub-specialty codes to its officers when they have met a requirement for time or training in a specific career field. In the case of the CM, the sub-specialty code is 1306. The unique situation for the CM is that only RL officers can hold the sub-specialty code 1306 according to the Navy Officer Manpower and Personnel Classifications (NOOCS) Vol I Appendix B manual. Usually, the RL officer to hold this sub-specialty code is a Supply Corps Officer.

Table 18. Contracting Statutory Position Requirements Source: DON (2019a)

Position	Special Statutory and Additional Requirements
Contracting Officers who award or administer contracts above the Simplified Acquisition Threshold (SAT) (see Note*)	<ul style="list-style-type: none"> - Completion of all contracting courses required for the acquisition Career Field certification level of the position. - 2 years of experience in a contracting position - 1102 education requirements for a degree and 24 semester hours of business-related courses - Any additional requirements established, based on the dollar value and complexity of the contracts awarded or administered in the position. - Exceptions to education requirements: Same as those for Civilian 1102 (and equivalent military positions).
Senior Contracting Official (SCO)	- All the requirements for Contracting Officers (above) apply plus 2 years of contracting experience (for a total of 4 years).
Other Flag Officers and General Officers assigned to Significant Acquisition Jobs	- 10 years acquisition experience in an AWF position, at least 4 years performed while assigned to a CAP
Note*: SECNAV will establish minimum training and experience requirements for Contingency Contracting Force (CCF) members before issuing warrants at or below SAT. CCF members appointed as contracting officers with authority to award or administer contracts above SAT will meet qualification requirements identified in this section for contracting officers above the SAT, with exception of a college degree. CCF members required to complete 24 semester credit hours of business-related courses.	

d. Marine Corps

Presently, there is no official roadmap for 3006 officers in the Marine Corps. However, according to Lieutenant Colonel Wynndee Young, USMC, the career field is currently being expanded, and there is a proposed roadmap, presented in Figure 21, that is largely based on the current PM roadmap (W. Young, personal communication, March 17, 2020). Once selected for O-5 level command, KOs do not return to 3006 Contracting Officer billets. Currently, there is not a large selection of 3006s in the Marine Corps, and



of those available there are limited O-4/O-5 experienced CMs due to primary MOS requirements, Command, Top Level Schools, and Joint Duty.

Grade Year in Service	2 nd Lt O-2	1 st Lt 3-5	Capt 6-10	Major 10-15	LtCol 15-20	Col 20-25
Formal Schools	The Basic School MOS School					
	NPS 18 months		Career Level	ILS	TLS	
MOS School and Operational Ground Logistics Billets	TBS/PMOS Tour (Div/MLG/Wing)	OPFOR Logistics Tour (Div/MLG/Wing)	Regional Contracting Offices, MLGs, PMOS OPFOR Tour Acq Tour	MEF OCS (G-4) MARFOR OCS Acq Tour	RCO/MLG Chief of Contracting, HQMC, Acq Tour, Joint Duty	Colonel Acquisition Officer Chief of Contracting Office Quantico
Selection to Acq PMOS						
Contracting Tours	1 st Acq Tour		2 nd Acq Tour		3 rd Acq Tour	
Year in Contracting	1 2 3		4 5 6		7+	
DAWIA Certification	Level I		Level II		Level III	
Officers PME complete, DAWIA certified in Contracting, and Masters Degree in Acquisition						

Figure 21. Proposed USMC 3006 Career Roadmap. Source: Personal communication W. Young (March 17, 2020).

The Marine Corps is the only Service that does not command screen O-5/O-6 KOs. In FY21, all Marine Expeditionary Force (MEF) Logistics Group Contracting Officer in Charge billets will be filled with first tour officers, lacking the experience, certifications, and leadership required to support expeditionary contracting requirements. The primary MOSs available for selection to 3006 is 3002, Ground Supply Officer, and 0402, Logistics Officers. The field grade 3002 population is not large enough to consistently staff both senior 3002 and 3006 billets with experienced personnel. Due to the limited availability of 3006 officers and the requirements of the Marine Corps pulling 3006s back to the primary MOS field, there is a decided lack of experienced CMs in the Marine Corps.

3. Experience Concluded

Among all the services, experience requirements in these two acquisitions fields differ greatly. The Air Force has its PMs and KOs in the field from “cradle-to-grave.” Air Force acquisition officers track and come up with their career roadmap experience requirements early on and have very specific requirements to follow alongside DAWIA certification. Air Force PMs and KOs are groomed from their first assignments, where



officers gain functional experience for further on assignments, where they expand their knowledge with broadening experience to strategic leadership development within their field of expertise. Air Force Acquisition Officers' experience is designed to be on a building block method where they learn from the tactical level of acquisition operations to the strategic level. They start with smaller acquisitions and build their knowledge and experience until they become responsible for larger programs and teams of acquisition personnel.

D. CURRENT SERVICE CAREER PATHS

As the researchers have gone through this analysis of the career path requirements for the of the services, the need for a clear, all-purpose timeline for an Acquisition Officer in each Service became apparent. The career timelines, or roadmaps, for an Acquisition Officer in each of the services are detailed next.

1. Army

Officers in the Army begin their acquisition career as Captains or Majors, after they have completed a few years of service and are branch qualified in their primary MOS (Gambles et al., 2009). The following career path does not represent the only path for Army Acquisition Officers, but, rather, it represents a generic career path guide for Army Acquisition Officer from O-1 to O-6. Once an Army officer completes Basic Officer Leaders Course (BOLC), they are assigned a branch designator and serve one to two tours in their primary branch. After selection to Captain, and between their fifth and sixth year of service, they complete the Captains Career Course (CCC). At this time, the Army Officer's branch designation is augmented, which is where the functional area (FA) in the Acquisition Corps (51A/C) would be assigned (DA, 2019). Once assigned an Acquisition FA, Army officers attend AAPC, where they learn the standards of their new FA. This is also when officers serve their first acquisition tour in their specific FA and earn their DAWIA Level I certification.

At the end of their first acquisition tour, they are screened for selection to Major and Intermediate Level School (ILE) or an Intermediate Qualification Course (IQC). KOs, specifically, attend Acquisitions Intermediate Contracting Course (AICC) after their



DAWIA Level I certification is attained to expand development in the field (USAASC, 2020). The second tour in acquisitions is when PMs do a broadening assignment, where they will learn more about the different disciplines in the acquisitions process. After their second tour in acquisitions, the O-5 selection and O-5 Centralized Selection List (CSL) boards convene to select leaders for Acquisition CAP assignments. If selected for a command position, an Army officer attends the Lieutenant Colonel (LTC) Pre-Command Course (PCC) before being assigned to an Acquisition command. In about the 20th year of service, Army acquisition officers are screened for O-6, O-6 CSL, and SSC, where they can be selected for senior staff positions, Program Executive Officers, Project Leads, and Army Contracting Command positions. Figure 22 is a model of this current generic career path for Army Acquisition Officers.

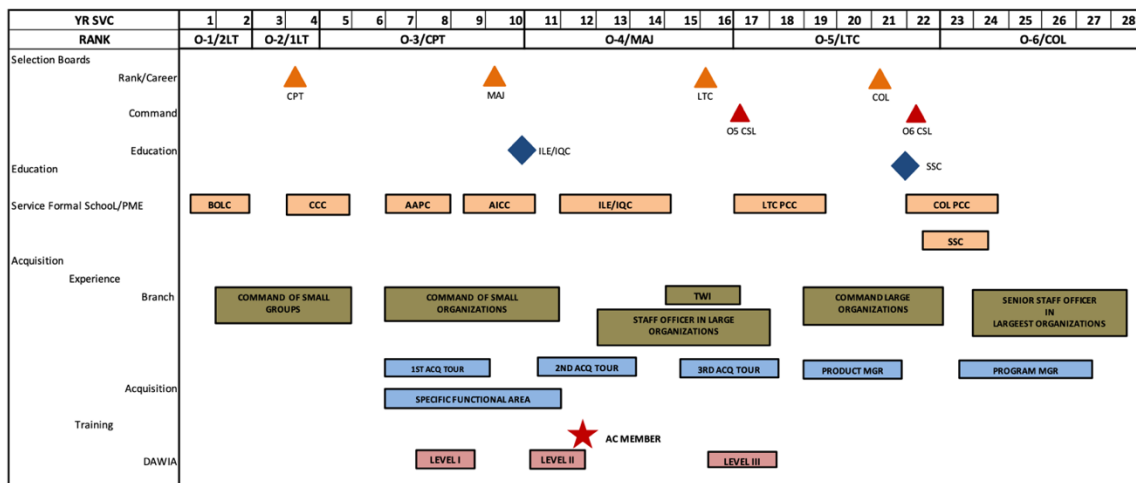


Figure 22. Generic Army Acquisition Officer Career Path

2. Air Force

Figure shows a generic career path of an Air Force Acquisition or Contracting Officer. The given career path is not intended to represent the only path but is representative of an officer that has promoted on-time. Throughout this subsection, the term *Acquisition Officer* encompasses both the Acquisition Manager (63AX) and the Contract Manager (64PX).

The Air Force's Acquisition Officer begins their career with a field of specialty, either 63AX or 64PX. Their first few tours have a blend of technical, leadership, and weapons systems familiarity. The acquisition officers immediately begin their DAU course



work as well. A benefit of this earlier training compared to the other services is that the Air Force Acquisition Officer obtains their DAWIA level III about 4 years earlier, on average.

The Air Force has resident and distance learning (DL) for advanced development education. Each iteration, Primary Development Education (PDE), Intermediate Development Education (IDE), and Senior Development Education (SDE), is in line with the officer's promotion to Captain (Capt), Major (Maj), Lieutenant Colonel (Lt Col) and Colonel (Col), respectively (DoAF, 2014). However, the officer is permitted to attend the DL version as soon as they are selected for promotion. Attendance to a resident option is by board selection or their Commanding Officer's hand selection. To be selected for resident education, either hand-selected or board-selected, is highly favored and is seen as more desirable for future promotions and duty assignments. The officer can only go to the resident development education once they have a minimum of 1 year of time-in-grade (TIG), but officers need to ensure that the advanced development education is completed one way or another prior to the next promotion board. The officer can select either the distance learning (DL) route or wait for the chance to get selected for resident school. The risk is that the officer may not get selected for resident and find that they are essentially behind their peer group if they passed up the chance to take the DL version. Going to graduate education as a First Lieutenant or junior Captain is not guaranteed either and is determined by rankings during the Mission Ready Contracting (MRC)/Air Force Fundamentals of Acquisition Management (AFFAM) courses and the officer's pipeline tour performance. A master's degree can also be obtained while attending the IDE or SDE.

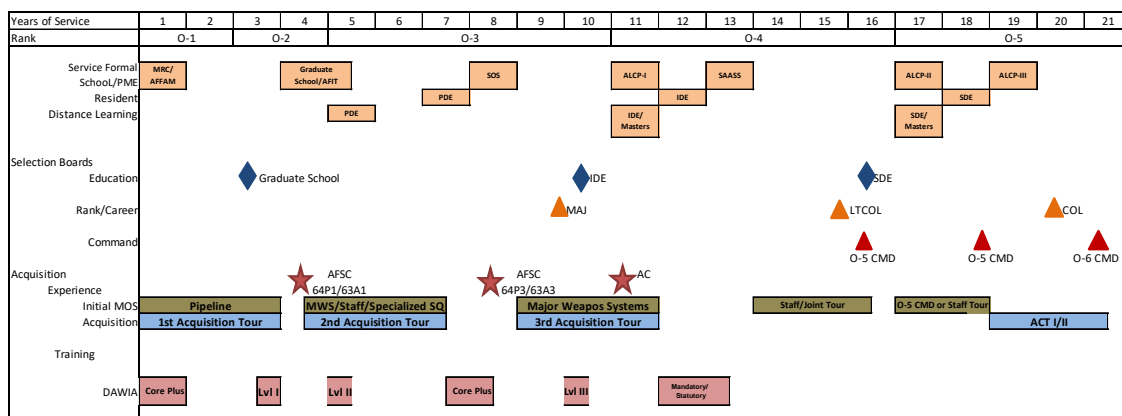


Figure 23. Generic Air Force Acquisition Officer Career Path



Courses such as Squadron Officer School (SOS), the Acquisition Leadership Challenging Programs (ALCP), and School of Advanced Air and Space Studies (SAASS) are automatic and should be on the officer's professional track but are not always in line with the provided timeline. Some of the time given to attend these classes is dependent on when the officer is no longer in an operational tour.

3. Navy

Figure 24 displays the Navy officers career path from O-1/Ensign (ENS) to O-6/Captain (CAPT). The officers career path consists of many milestones, such as education, training, and experience, that officers are encouraged to achieve to get promoted to the next grade. In each career milestones, the officers must go through four different types of the Navy's Administration Boards. These boards are rank/grade promotion, education, training, and experience. The Rank/Grade Promotion Boards are for those officers getting promoted, starting at the rank from O-3/Lieutenant (LT) and continuing to O-4/Lieutenant Commander (LCDR), O-5/Commander (CDR), and O-6/CAPT. At each rank/grade promotion board, the Navy officers have several important wickets to accomplish in order to be competitive in their career field. For O-4/LCDRs' promotion board, the board members review these following valued achievements: (a) warfare qualification; and (b) two operational (OP) tours in which a department head (DH) tour is encouraged. For O-5/CDRs', the valued achievements prior to the board are: (a) a master's degree related to the Supply Corps line of operations; (b) Joint Professional Military Education (JPME); and (c) challenging shore tours at Type Command (TYCOM), Systems Command, Fleet Logistics Center, Operation Navy (OPNAV), Defense Logistics Center (DLA) or Joint command. The master's degree and JPME are not required, but both are strongly encouraged (OSCP, 2011). To be competitive for the O-6/CAPT board, the major quality that the service members must possess is leadership, the ability of the officers to lead and guide sailors in a visible and challenging environment. The most strongly recommended qualities for an officer to have are (a) officers' experience in an acquisition line of operation; (b) Acquisition Corps membership; (c) O-5/CDR OP tour or command tour; and (d) Joint Qualification Officer (JQO).



The Education Boards include the education programs, such as the Naval Postgraduate School (NPS) and Civilian Institutions Postgraduate Schools (CIVINS 810/811). CIVINS 810/811 are the master's degree programs in which the selected officers earn a Master of Business Administration (MBA) degree. The 810 program attendees will earn an MBA degree in Supply Acquisition/Distribution Management, and those in the 811 program receive an MBA degree in Petroleum Management from the School of Engineering. The Training Boards consist of the programs like the Internship programs and the Training with Industry (TWI) programs. The Internship programs give junior officers the opportunity to get professional experience in the Supply Corps principal competencies. TWI programs provide the LCDRs with supply chain management and logistics experience as well as an opportunity to gain exposure to executive level decision-making in their professional development. The Experience Boards are the senior officer major command boards, such as, the O-5 Shore Command Board, the O-5 OP Board, and the O-6 Shore Command Board. The O-5 and O-6 Shore Command Boards compile the list of selectees to the major assignments, such as Defense Contract Management (DCMA), Defense Logistics Agency (DLA), and Naval Supply Systems Command (NAVSUP). The O-5 Operational Board is the selection board for the DH assignment on large-platform ships

Navy officers enter the operating forces after attending the Basic Qualification Course (BQC) for 6 months, the basic school for the Supply Corps. Then the officers go on their first OP tour as a division officer (DIVO) on a ship for 2 years. Some of the Navy officers may choose or get recommended to do their first OP tour as a DH on the submarines. Officers heading to their DH tour are required to attend a four-week DH school program en route to their assignment. On this tour, the officers are required to get their warfare qualifications (surface/air/submarine) on their assigned ship platform. Next, the officers head out to their shore tour for next 2–3 years. Most Navy officers choose to apply for the Internship programs. The officers have an opportunity to gain acquisition experience and begin their DAWIA Level I acquisition training. Some officers choose an overseas assignment and non-related acquisition billet for their shore tour. Then the officers head back to sea for their second OP tour for 24–30 months. The officers may choose to do a DH tour on a small-platform ships/submarines or another DIVO tour on large-platform ships. After their second OP tour, some officers choose to earn a postgraduate education,



such as attending NPS or CIVINS (810/811) for 18 months. Some officers prefer to do 1-year training in a TWI program; some pick a 36-months Joint assignment. The officers are required to take a 6-weeks JPME II course in route to a Joint assignment.

After their postgraduate school tour, Navy officers either may go to an acquisition tour for 3 years and work on their DAWIA Level II acquisition training. Some officers head back to their third OP tour on a large-platform ship for 2 years. The next assignment for the officers is a shore tour either in acquisition, Joint, or policy tour while they are waiting to get slated for their O-5 OP DH tour on a large-platform ship or an O-5 command shore tour. Both are 2-year tours. The selectees of the O-5 OP DH tour are required to attend a 5-weeks Senior DH school program in route to their assignment. At O-6/CAPT, the officers are in command of the major or largest organizations. Some officers maintain in their acquisition line of operations and become PMs, and some become the Joint Qualification Officer (JQO). Overall, there are many career paths that the officers can take to advance through each rank/grade, but most importantly to the officers are the tools do they have in their tool bag to get them there. The three most essential tools are education, training, and experience

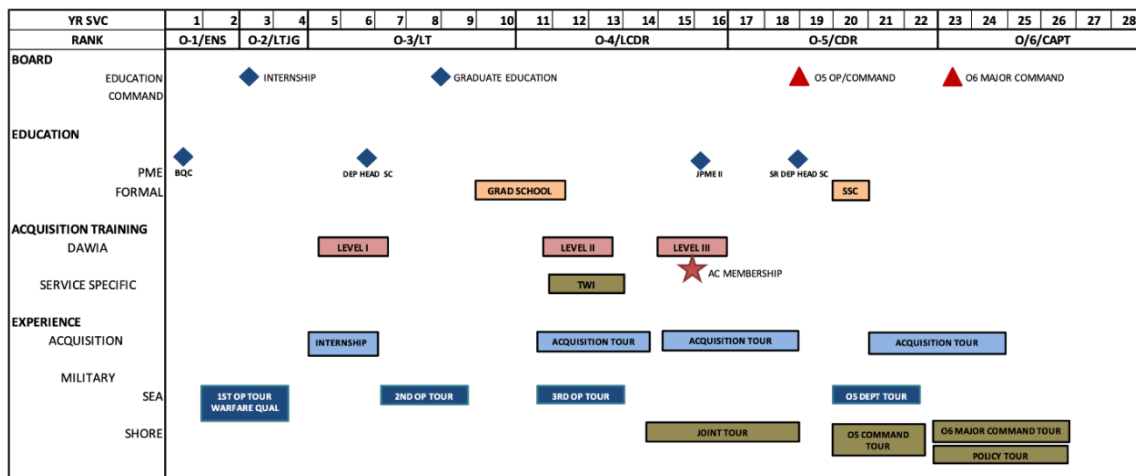


Figure 24. Generic Navy Acquisition Officer Career Path

4. Marine Corps

The Marine Corps officers enter the operating forces after attending the Basic School for 6 months and then Primary MOS school, which can be anywhere from 2–6 months. Marine Corps officers then go on their first operational tour for up to 3 years.



During the time that they are eligible for rotation to their next operational tour, is when they are screened on the Commandant's Professional Intermediate-level Education Board (CPIB), where they can be selected to attend graduate school in an acquisition career field. When they are attending graduate school, they are screened in the Officer Retention Board for Career Designation. Career Designation is designed as a management tool for the Marine Corps to "retain the highest quality officers" beyond their initial obligated service (Deputy Commandant Manpower and Reserve Affairs, 2020b, paras. 2.a). One could guess that if an officer is selected for a graduate education by the Marine Corps, then they will be retained by the Marine Corps. After attaining their graduate degree in an acquisition field, Marine Corps officers then get sent to their first acquisition tour where they get assigned the secondary MOS of 8057 for PMs and 3006 for KOs. While serving in their first acquisition tour, they gain the experience and requirements to attain Level I and Level II DAWIA certification.

After their first acquisition tour, Marine Corps officers transition back to their Primary MOS (PMOS) and do an operational tour outside of the acquisition career field. During this operational tour, the officer is screened for promotion to Major and on the Commandant's Career-Level Education Board (CCLEB), where they are screened for Career level Schools, Congressional Fellowships, International Affairs programs, graduate education, and other career enhancing educational opportunities (Deputy Commandant Manpower and Reserve Affairs, 2020a). Once selected to Major, officers who meet the requirements can submit their application to lateral move to the MOS of 8059 or 8061 via the Acquisition Primary MOS Selection Board, as well as complete the field grade Professional Military Education (PME) requirement of Command and Staff (C&S) (Deputy Commandant Manpower and Reserve Affairs, 2020b). KOs with the secondary 3006 MOS can also apply for a lateral move under the Acquisition Primary MOS Selection Board. The Marine Corps designed Acquisition Primary MOS Selection Board to "develop a population of Marine Corps acquisition officers who meet statutory requirements and are highly competitive for program management positions of major defense acquisition programs" (Deputy Commandant Manpower and Reserve Affairs, 2020c, paras. 1). Once selected for the PMOS of 8059/8061, Marine Corps acquisition officers go to a second



acquisition tour, where they obtain DAWIA Level III certification and membership in the AC.

At the end of the second acquisition tour Marine Corps officers again transition out of the acquisition field and do another operational tour. This is where an officer is screened for selection to O-5 and then O-5 command positions. This third operational tour is focused on a Staff, Joint, or O-5 command position, and towards the end of this tour, an officer will again be screened for an O-5 command opportunity. Here is where this path can diverge a little as a Marine Corps officer can do a back-to-back operational tour or transition back to the acquisition field, and during this tour an officer is screened for O-6 and O-6 command opportunities. This timeline brings a Marine Corps officer to approximately 21 years of service, and any further on the career timeline becomes very specific to an individual. This generic career path for Marine Corps Acquisitions Officers is displayed in Figure 25. However, it could be speculated that an O-6 Marine Corps officer would not be an acquisition billets unless they are in charge of Marine Corps Systems Command; this position is the executive agent for acquisition training and education, and is in charge of all Marine Corps ground weapon and information technology programs (MCSC, n.d.-b).

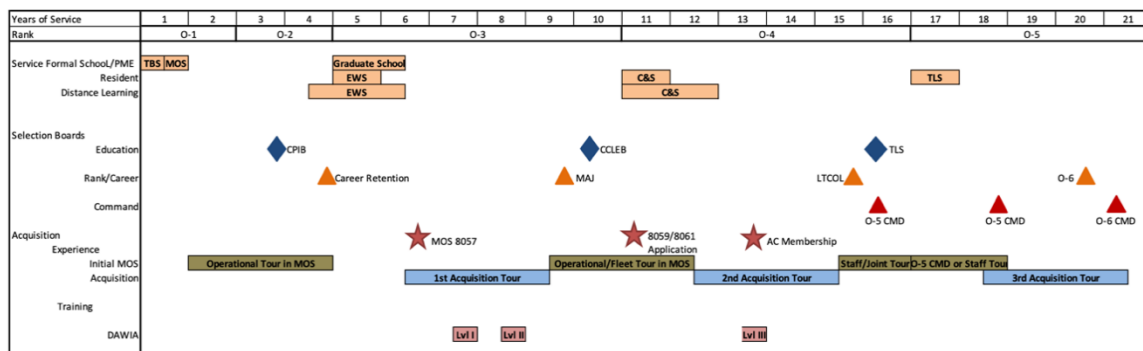


Figure 25. Generic Marine Corps Acquisition Officer Career Path

E. CONCLUSION

In three services, the Army, Navy, and Marine Corps, the uniformed acquisition officers join the field later in their career, from Captain to Major. For the Navy and the Marine Corps, once an officer crosses into the acquisition field, they do not necessarily remain in that field for the rest of their career; they may rotate back into their primary MOS. The Army maintains its acquisition officers in acquisitions once they cross into the



field. The Air Force is the only Service that selects and trains its acquisition officers from day one in the military. It could be suggested that the Army, Navy, and Marine Corps have their officers train in different Primary MOSs before going into acquisition fields to give their officers a better understanding of their customers' needs.

One could say that although Air Force acquisition officers start working in their career field earlier and therefore gain more acquisition-related experience and knowledge at an earlier stage, they are no more qualified or experienced than the other three services that enter the field as Captains/Majors. The other services, outside of the Air Force, might not have the compounded experience in the program management or contract manager fields as junior officers (O-1s and O-2s), but they have operationally military experience. One could opine that having the general military operational experience leads to the officers being a more well-rounded and possibly more able to relate to the acquisition customer—the warfighters.



V. CONCLUSIONS AND RECOMMENDATIONS

In the previous chapter, the generic career paths for acquisition officers in each of the services was identified. In this chapter the advantages and disadvantages of those career paths are discussed. The results of this research are that there is advantage for junior officer to serve in non-acquisitions positions and that, once an Acquisitions Officer enters in the acquisitions field, conducting back-to-back tours in acquisitions greatly benefits the experience and knowledge of the officer in their functional area of acquisitions. To take advantage of the advantages found during this research a recommended career path that all of the services could use is created. This new Universal Acquisition Officer Career Path (UAOCP) incorporate recent initiatives to requirements changes, anticipated changes, and the best practices from all the services into a career path that limits the disadvantages while enhancing acquisitions experience. This chapter will sum up the results of the research, discuss what the results mean, and apply these results to the UAOCP to benefit uniformed Acquisitions Officers in the DoD.

A. CONCLUSIONS

Colin Powell, when interviewed about resourcing organizations, said “always find different ways to accomplish the mission. Then run a counter analysis and list the advantages and disadvantages. When you have done that, you are ready to make a decision” (Zehnder, n.d., p. 30). There is always an argument that for every advantage there is a corresponding and reciprocal disadvantage. However, if it is understood why the disadvantage exist, one can learn from that knowledge and use it for further beneficial analysis. For clarity, the summary of the advantages and disadvantages of the current Service Acquisition Officer career paths put into the framework of strengths, weaknesses, opportunities, and threats. The advantages focused on the strengths and opportunities and the disadvantages were divided into weaknesses and threats to the training, education, and experience of an Acquisitions Officer. The identification of the advantages and disadvantages was done to recommend a different career path that this thesis is proposing which is a better alternative to the way things are currently done.



1. Advantages

As presented in Chapter IV, three of the services, Army, Navy, and Marine Corps, start their uniformed officers on the Acquisitions career path when they are mid to senior O-3s. Before this, the officer is trained in and serves in a primary MOS, which could be unrelated to the process of acquisitions in any sense, other than as a customer. After their first tour in their primary MOS, officers are then selected for apply to go into an acquisitions field. As our research found, the strength of this approach is that the individual officer is able to learn more about the customers that they will eventually be supporting. This presents the opportunity for officers to gain explicit knowledge of the needs of the customer and the frustrations of turning a requirement into an actual product, as they are serving side by side with customers. This approach focuses on creating a well-rounded officer, who has actively developed more knowledge and understanding in a wide range of areas (Schwartz, 2017). This method enables individual officers to understand the unique perspective of the warfighter because they understand where the warfighter is coming from and why they would require certain products. This better enables officers to work with the customer on developing a product that will fulfill the warfighters' needs in the field.

On the other hand, the Air Force acquisition officers begin their career path as from day one, presenting the strength to quickly gain technical knowledge and the opportunity to apply that knowledge earlier on their careers, thus gaining experience. Air Force acquisition officers become subject matter experts, very technically savvy in their jobs, know the regulations and processes backwards and forwards, and are certified in their specialty very quickly; meaning they can execute their duties as a more junior officer compared to the other services. This gives Air Force officers the opportunity to serve the warfighter more efficiently, about 4 years earlier on in their career. This also presents the opportunity for the Air Force officer to serve as an acquisition professional longer throughout their career.

2. Disadvantages

This section includes an analysis the harmful results of the distinct career paths of the various services that were discovered during the research. More specifically, there is a focus on the weaknesses of each and the threats to the individual Service Acquisition



Officer career paths. Looking at the advantages to the current services' career paths, the disadvantages seem to directly correspond to the strengths. For the three services that start their acquisition officers as O-3s, the weakness is they are not as technically competent in acquisitions as soon as Air Force Acquisition Officers. As an O-3 who has no experience in the acquisitions process once they transfer into that field, they have to learn the processes and regulations before they can operate independently in that position. For example, a KO or PM who comes in as an O-3 will not be able to have a Level I DAWIA certification for a year, meaning they will not be able to write contracts or manage a program because they have to learn the new job and meet the DAWIA certification requirements. Another weakness to these Acquisition Officers' career paths is that if they do not hold a position with an acquisition coded billet, they will never attain certification and be able to serve in higher positions in acquisitions. An identified threat to these current career paths is if the Acquisition Officer doesn't serve back-to-back acquisition tours, they will never gain that long-term experience in acquisitions that will enable them to gain the higher level DAWIA certifications. This research interpreted this as meaning that the services constantly have a new pool of acquisition officers who do not have the ability to knowledgably and efficiently do their job.

For the Air Force Acquisitions Officers the disadvantage is reversed from the other services. As the Air Force Acquisition Officer comes into the acquisitions field as an O-1, the weakness in this current approach is that they don't serve in any area outside of acquisitions. Not serving with outside acquisitions service members means that the Acquisition Officer does not create that connection with their customers. This means that Air Force acquisition officers do not gain that first-hand knowledge of the warfighter and their needs, making it harder for the customer to connect to the acquisitions team and the warfighter to get what they need to effectively operate. Another threat is that, as more and more programs become Joint in nature, like the Joint Strike Fighter, the Air Force Acquisition Officer competes for these positions; the lack of connection to the warfighter leaves them at a disadvantage to get and effectually serve in these positions.



B. DOD’S NEW INITIATIVE: “BACK-TO-BASICS”

On September 2, 2020, the Under Secretary of Defense for Acquisition and Sustainment Ellen Lord, issued a memorandum stating that it is

imperative that [the DoD] pivot from the past broad workforce focus and get Back-to-Basics (BtB) by streamlining our functional area framework and prioritizing limited training resources for the Defense Acquisition Workforce (AWF) who develop, acquire, and sustain operational capability. (OUSD[A&S], 2020, p. 1)

This phased approach to changing the way certification is to be completed applies to the program management and contract management fields, among others. Lord went to say that the Back-to-Basics (BtB) emphasizes “achieving streamlined and restructured certification requirements, identifying prioritized credentials, and providing for continuous learning” for each of the AWF FAs (OUSD[A&S], 2020, p. 2). BtB is a DoD initiative that is in the early stages but hasn’t changed the certification requirements for Acquisitions Officers but will be fully in effect for KOs by September 2021. This initiative is important to this research because personnel development has been recognized as an issue that the DoD needs to address, which we have done with this research (Lord, 2020).

Back-to-Basics does not attempt to change the certification progress to narrow the field but is designed to allow a wider pool of resources at many levels. Education requirements have not changed with the application of the BtB initiative, mainly, the requirement to have certain fields of study for the baccalaureate degree was removed as a requirement for certification. Again, this was to open up the profession to those who that may not have the foreknowledge that business credits would be needed in their government jobs or to qualify for a sub-MOS 7 years into their career. With this new initiative training will be dramatically revamped. Previously, a contracting professional going through the three levels of certification could expect to attend over 655 hours of resident or online training (Linden, 2020). With the BtB plan, training would be down to approximately 250 hours prior to potential acquisition officers taking the Acquisition Entrance Exam (AEE) (Linden, 2020). The focus of BtB is transitioning from, “Did you finish the class?” to “Can you demonstrate that the competency can be performed?” The remaining 405 hours did not just disappear. There are assessments and a minimum of 80 continuing hours of education



and knowledge (CHEK) that must be completed every 2 years. The CHEK is tied to what competency needs attention or has been shown to be adequately demonstrated. The change to have one comprehensive exam may be the biggest development that BtB proposes to enter into the acquisitions field. A professional is no longer tested out of a level but is instead tested into a profession. The comprehensive exam is essentially an entrance exam that is still equivalent to the assessment for the original DAWIA Level I coursework (Linden).

Figure 26 is a draft of the proposed changes to the certification requirements for KOs under the BtB initiative. Education, training and experience requirements have not changed from the DAWIA Level I certification requirements. There is the addition of the assessments, but the biggest changes are in validation and certification currency. Validation is where a potential Acquisition Officer record will be compared against the acquisition field requirements before certification can be gained. This validation is in an attempt to ensure that those that execute the duties of a position are qualified to carry out those duties. The certification currency requirement is the 80-hour CHEK requirement that is to ensure relevance in the competencies throughout the years.

Contracting Certification	
	DoD Contracting Professional Certification Requirements
Education	Baccalaureate Degree
Training	Contracting Common Competencies (does not include Mission Focused or Specialty Competencies)
Experience	12 months full time experience applying a representative sample of the contracting competencies <ul style="list-style-type: none"> • Equivalent experience may be considered in government or industry (must be documented and presented in detail) • Representative sample of contracting competencies determined by the Component
Assessment	Comprehensive Exam on Contracting Common Competencies
Validation	Agency/organization validates that all of the above is completed and provides official DoD Contracting Professional Certification
Certification Currency	<ul style="list-style-type: none"> • 80 Continuing Hours of Education & Knowledge (CHEK) (replaces CLP nomenclature)/2 years – DoDI 5000.66. • CHEKs are taken in technical, professional, and specialty competencies. • A certain amount of CHEKs, as determined by supervisor, shall directly map to professional competencies. • If 80 hours is not completed within 2-year time period, certification becomes inactive. <i>You re-activate certification after passing Assessment (Exam on Curriculum) again. More specifics need to be provided in DoDI 5000.66 on this subject, such as a CHEK waiver process.</i>

Figure 26. Proposed Contracting Officer Certification Requirements. Source: Linden (2020).



The way the BtB programming is structured, it can be interpreted that this certification process for acquisition fields is mainly opening the field to the hiring of more civilian employees to manage the capability of contracting and program management rather than provide some additional benefit to the uniformed individuals. If this is the case, there is the possibility that the services will lose the ability to conduct these functional areas themselves. Basically, the DoD is “farming” out the service of acquisitions, as in making the field more accessible. One prevailing reason not to open the field too wide is that there may be “a negative impact on a capacity that the organization wishes to retain and develop” (Cohen & Eimicke, 2008, p. 96). It is too early to make an educated prediction on how the BtB will impact the quality of uniformed individuals compared to their civilian counterparts. Time will tell if the new design will increase or decrease advantages from a career progression point of view. If the result of this BtB is that more civilians enter the military acquisitions field, the accountability and monitoring of the programs will have to be redesigned to ensure the interests of the military can still be carried out appropriately. There must be assurances that there is little to no negative impacts on the careers of future acquisition officers.

The BtB currently has very little impact on the projected UAOC. Billeting and promotion rates seem to be unscathed. However, there is currently no literature on the impact to CAP and KLP eligibility once the BtB is implemented. There may not necessarily need to be any updates, considering CAP and KLP designators are just describing particular high-level positions. The focus on the “Basics” part of BtB, and it is extremely beneficial in that the DoD will have the confidence that the acquisition corps is robust and ready at any level. Unfortunately, the hurdles of cultural acceptance and short-term versus long-term benefits acknowledgement would have to be traversed.

C. RECOMMENDATION

There is an adage that says, “Do not reinvent the wheel.” This research interprets this statement to mean, “don’t start from scratch.” Instead, improve on what has already been done. Understanding the previous strengths, weaknesses, opportunities, and threats to the services’ individual Acquisition Officers’ career paths, allows for DoD policy makers to develop a career path that harnesses the advantages and mitigates the disadvantages as



much as possible. The following Universal Acquisition Officer Career Path that this thesis proposes is obviously not a “silver bullet” for every potential Acquisition Officer, but it could be a tool for future developments of a more inclusive (i.e., Joint) military Acquisition Officer career path.

Considering the new DoD initiative and the results of this research, we developed the UAOCPP utilizing the results and parts of the DoD initiative. Throughout this research which discussed the advantages and disadvantages of the current Service career paths, many common themes between the services’ current career paths emerged. The Universal Acquisitions Officer Career Path (UAOCPP) presented below was created using those common themes and adding some recommendations to improve upon the current career paths. This UAOCPP can be used as a guideline by all the services to create highly trained, educated, and experienced Acquisition Officers. The UAOCPP incorporates recent changes introduced in the BtB initiative and allows acquisition officers the option to serve in command positions or remain in Acquisitions until O-5.



Figure 27 is a diagram of the created UAOCP and what an Acquisitions Officer career path could look like using this newly developed MODEL.

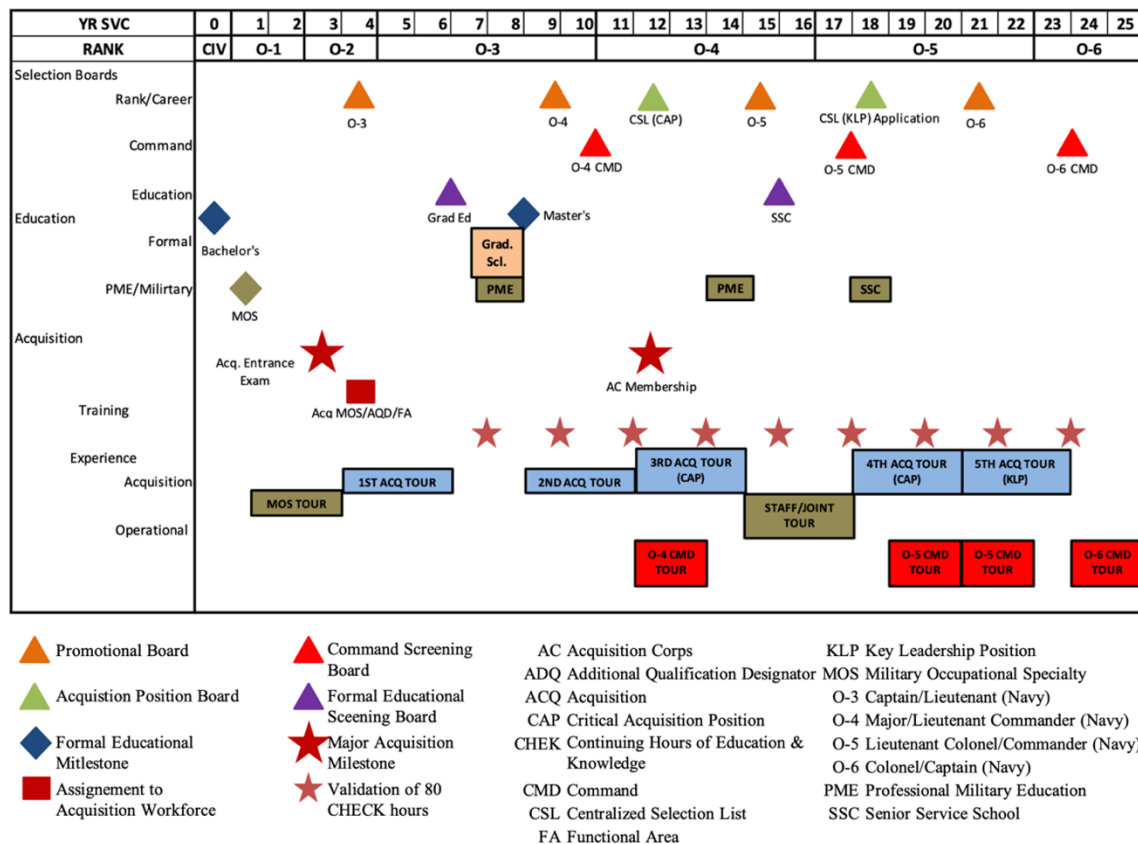


Figure 27. Universal Acquisitions Officer Career Path

The first difference between the current career paths and the UAOCP is the Acquisitions Entrance Exam (AEE), which an officer would take as an O-2 within their third year of service. This would be an exam designed to test the aptitude of officers who would like to enter the acquisition field and based on the civilian accredited standards for the field. This test is similar to what the BtB wants to implement; it is a comprehensive exam on common practices that signifies the officer has achieved initial readiness to enter into the contracting or program management fields (Linden, 2020). This would mean that the prospective Acquisitions Officer would need to study and prepare on their own before taking this exam, but this would also demonstrate the officer's drive to enter the acquisitions field. After successfully passing the AEE, an officer would then be assigned the new Acquisitions MOS, dependent upon their selection to O-3. The assignment of an acquisitions MOS would require all the services to make the acquisitions MOS a primary



MOS, signifying the lateral move of these officers into the acquisitions field. This would mean that the officers would not bounce back and forth between acquisitions and their initial primary MOS, as the Navy and Marine Corps currently do. Also similar to BtB the UAOC requires Acquisitions Officers to maintain 80 CHEK throughout their career, even while serving in non-acquisition positions.

The next difference from the services' current career paths is that at year 6, acquisition officers would be screened for selection to an in-resident graduate school after completing their first acquisitions tour. Officers should also ensure that rank appropriate PME is complete before the master's degree is complete. If not selected to a resident program they should complete a master's program and PME on their own before the O-4 promotional board to remain competitive. After graduate school and attaining a master's degree in an acquisition related field, officers would complete a second acquisitions tour. After promotion to O-4, the officer would gain entry to the Acquisition Corps and would then be screened on the Centralized Selection List (CSL) for placement in a Critical Acquisition Position (CAP). While an O-4s, officers should ensure that they complete the next level PME before the O-5 selection board. This point, around year 12 of service, officers can either get selected to serve as commanders or serve an operational tour as a Staff or Joint officers. The operational tour is important to broaden the overall experience of officers, allowing them to learn and understand strategic level planning and cooperation within the services. While serving in the operational tour, at around year 15 of service, officers get screened for promotion to O-5, the Senior Service College, and O-5 command positions.

After the operational tour as a Staff or Joint officer, Acquisitions Officers would go to a third Acquisitions tour, where they would get the opportunity to serve in a CAP, if they did not get that opportunity before. This secondary opportunity to serve in a CAP is important to the career progression because of the command opportunities present, meaning if an officer served as an O-4 commander, they would still get the opportunity to serve in a CAP, and if they serve in a CAP early on, they still have the opportunity to be a commander as an O-5. While serving on the fourth acquisitions tour, officers will be screened for O-5 command and on the CSL for Key Leadership Positions (KLP). At this point in an officer's career, around year 18 of service, they could serve as an O-5



commander or on a fifth acquisitions tour in a KLP. While serving in the fifth acquisitions tour officers would be screened for O-6 and, subsequently O-6 command. By this time, if not selected to O-6, an officer would have reached 20 years of service and be able to retire with adequate acquisitions experience to get a job in acquisitions after retirement. Figure 27 is a diagram of this UAOCP.

Though the UAOCP emphasizes acquisitions tours, to gain the most experience in acquisitions as possible, there is still the option to serve as a commander while still gaining at least three tours in acquisitions. Presented in Figure 28 are some of the possible career paths that an Acquisitions Officer could take using the UAOCP, that shows the different paths an Acquisitions Officer could take while it still offers them the chance to command and gain a breadth of acquisitions experience.

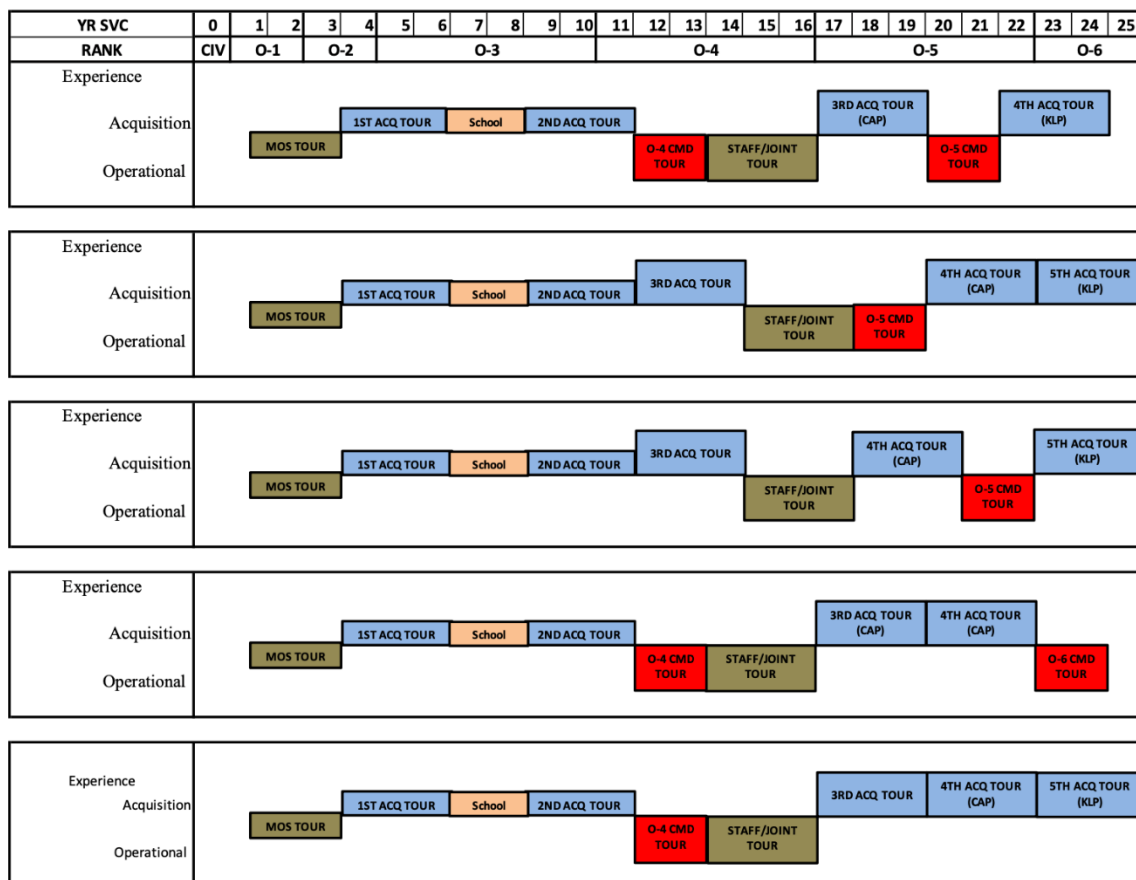


Figure 28. Possible Career Paths Using the UAOCP



The initial purpose of this research was to answer the question, “What current career path practices for PMs and KOs across the services should be adopted from one Service to the others to maximize competencies and effectiveness in program management and contract management in Joint acquisition programs?” Throughout this research, the practice that seemed to give the most credence to gaining knowledge and experience in acquisitions was the ability of Acquisitions Officers to serve back-to-back tours in the acquisitions field. Another practice that seemed to allow acquisition officers to better connect to the warfighter was serving in a non-acquisition position for a time. While these practices may seem contradictory to each other, there is a way that each Service could adopt them. The Navy and Marine Corps could adopt the practice of allowing the acquisition officers to stay in the acquisitions field once they cross over, making it a lateral move rather than a sub-specialty or secondary MOS. This would allow back-to-back acquisition tours for the Navy and Marine Corps ensuring adequate knowledge and experience is gained. Air Force Acquisitions Officers, on the other hand, could serve as a junior officer for at least 2 years in non-acquisition tours as a broadening experience allowing them to connect to non-acquisition airmen/warfighters.

D. AREAS FOR FURTHER RESEARCH

This research is just the beginning of possible changes in the services. Some recommended areas for further research include:

- What will be the cost difference to the DoD between the single BtB certification for KOs and the current DAU certification process? A cost-benefit analysis should be conducted before full commitment to the new process.
- Will the DoD-created certification, under the BtB program, be equally accepted as, for example, the civilian National Contract Management Association certifications?
- How will the certification be maintained by the uniformed Acquisition Officer? Will the currently offered DAU Continuous Learning courses still be accepted as CHEK courses?
- With the implementation of BtB will the coding of acquisition billets not matter for certification anymore? If there is someone regionally or locally who can certify CHEK's, then does the coding of a billet no longer matter?
- For the Navy and Marine Corps, will taking the initial test to enter officers into the acquisition field, laterally move them from their current



MOS into an Acquisitions field? Or will the individual officer continue to rotate in and out of the acquisitions field? If they do, who in a normal (non-acquisition) military unit will certify the CHEKs?

There are many other considerations before such drastic changes to the acquisition's certification process can be implemented. Minor changes can create lasting positive or negative changes, which is why further research on this subject is important to creating the best possible uniformed DD Acquisition Officers.



APPENDIX A. DAWIA PROGRAM MANAGEMENT CERTIFICATION REQUIREMENTS

CERTIFICATE STANDARDS & CORE PLUS DEVELOPMENT GUIDE PROGRAM MANAGEMENT LEVEL 1	
Type of Assignment	Representative Activities
Weapon Systems	<ul style="list-style-type: none"> ➤ Participates in an IPT delivering a weapon system, C2/network-centric system, or space system. ➤ Performs financial and status reporting and basic logistics activities. ➤ Supports pre-award contract activities and workload planning and scheduling
services	<ul style="list-style-type: none"> ➤ Assists in acquisition planning, assessing risk (technical, cost and schedule), and contract tracking and performance evaluation
Business Management Systems/IT	<ul style="list-style-type: none"> ➤ Participates in a business process IPT, fundamentals of enterprise integration, and outcome-based performance measures.

Core Certification Standards for Program Management Level 1 (Required for DAWIA Certification)	
Acquisition Training	ACQ 101 – Fundamentals of Systems Acquisition Management
Functional Training	ENG 101 – Fundamentals of System Engineering
	CLB 007 – Cost Analysis
	CLV 016 – Introduction to Earned Value Management
Education	<ul style="list-style-type: none"> ➤ Formal education not required for certification
Experience	<ul style="list-style-type: none"> ➤ 1 year of acquisition experience with cost, schedule, and performance responsibilities

Core Plus Development Guide for Program Management Level 1 (Desired training, education, and experience)			
Training	Type of Assignment		
	Wpn Sys	services	Bus Mgt/ IT
CLC 011 – Contracting for the Rest of Us	√	√	√
CLL 011 – Performance Based Logistics (PBL)	√	√	
LOG 100 – Life Cycle Logistics Fundamentals	√	√	



PMT 0170 – Risk Management	√	√	√
TST 102 – Fundamental of Test and Evaluation	√		
➤ Education – Baccalaureate degree, preferably with a major in engineering, systems management, or business administration			
➤ Experience – One (1) year acquisition experience (addition to core certification experience)			

CERTIFICATE STANDARDS & CORE PLUS DEVELOPMENT GUIDE PROGRAM MANAGEMENT LEVEL 2	
Type of Assignment	Representative Activities
Weapon Systems	<ul style="list-style-type: none"> ➤ Structures and guides systems engineering activities. ➤ Establishes a risk/opportunity program; structures and conducts technical reviews. ➤ Works with contracting personnel. ➤ Maintains configuration control. ➤ Leads IPTs in support of developing and delivering a weapon system, C2/network-centric system, or space system.
services	<ul style="list-style-type: none"> ➤ Structure incentives tied to desired outcomes for service contracts, prepares plans for mitigating risks, provides contract tracking and oversight. ➤ Performs most acquisition planning tasks as established in Attachment 1 to AT&L services Memo of Oct. 2, 2006.
Business Management Systems/IT	<ul style="list-style-type: none"> ➤ Leads IPTs, identifies and manages enterprise-level business systems and issues, and applies performance measures within the acquisition community and program office context that directly impact systems under development.

Core Certification Standards for Contracting Level 2 (Required for DAWIA Certification)	
Acquisition Training	ACQ 202 – Intermediate Systems Acquisition, Part A ACQ 203 – Intermediate Systems Acquisition, Part B ®
Functional Training	PMT 2520 – Program Management Tools Course, Part I
	PMT 257 – Program Management Tools Course, Part II
	CON 121 – Contract Planning
	CON 124 – Contract Execution
	CON 127 – Contract Management
	EVM 101 – Fundamentals of Earned Value Management
	ISA 1010 – Basic Information Systems Acquisition



Education	➤ Formal education not required for certification
Experience	➤ 2 years in program management with cost, schedule, and performance responsibilities.

Core Plus Development Guide for Program Management Level 2 (Desired training, education, and experience)			
Training	Type of Assignment		
	Wpn Sys	services	Bus Mgt/ IT
ACQ 315 – Understanding Industry ®	√	√	√
BCF 216 – Applied Operating and Support Cost Analysis ®	√	√	√
CLE 004 – Introduction to Lean Enterprise Concept	√	√	√
CLE 022 – Program Manager Introduction to Anti-Tamper	√		
CLL 006 – Public-Private Partnerships	√	√	
CLM 025 – Commercial-Off-The-Shelf (COTS) Acquisition for Program Managers	√	√	√
CLM 031 – Improved Statement of Work	√	√	
LOG 0020 – Defense Logistics Agency Support to the PM	√	√	
LOG 105 – Fundamentals of System Sustainment Management	√	√	
PMT 101 – Production, Quality, and Manufacturing Fundamentals	√	√	
➤ Education – Master’s degree, preferably with a major in engineering, systems management, business administration, or a related field			
➤ Experience – Two (2) years acquisition experience, preferably in a system program office or similar organization			

CERTIFICATE STANDARDS & CORE PLUS DEVELOPMENT GUIDE PROGRAM MANAGEMENT LEVEL 3	
Type of Assignment	Representative Activities
Weapon Systems	➤ Leads and provides oversight of IPTs delivering a weapon system, C2/network-centric system, or space system. ➤ Leads tasks supporting pre-award contracts, financial management, risk management, systems engineering, total ownership cost determination, contract coordination, and communications.
services	➤ Organizes and leads DoD professional, administrative, and management support service contracting as relates to developing clearly stated and actionable requirements packages.



	<ul style="list-style-type: none"> ➤ Coordinates with local contracting officers, and ensures opportunities for socio-economic business concerns. ➤ Performs all acquisition strategy requirements actions noted in Attachment 1 to AT&L services Memo of Oct. 2, 2006.
Business Management Systems/IT	<ul style="list-style-type: none"> ➤ Oversees transformation integration, planning, and performance, and investment management as applies to the acquisition community and program office(s), and system(s) under development.

Core Certification Standards for Program Management Level 3 (Required for DAWIA Certification)	
Acquisition Training	Non required
Functional Training	ACQ 315 – Understand Industry ®
	BCF 110 – Fundamentals of Business Financial Management
	ENG 201 – Applied Systems Engineering in Defense Acquisitions, Part I
	EVM 263 – Principles of Schedule Management ®
	LOG 104 – Reliability, Availability, and Maintainability (RAM)
	PMT 355 – Program Management Office Course, Part A
	PMT 360 – Program Management Office Course, Part B ®
Education	<ul style="list-style-type: none"> ➤ Formal education not required for certification
Experience	<ul style="list-style-type: none"> ➤ 4 years in program management with cost, schedule and performance responsibilities ➤ At least 2 years in program office for systems development and acquisition or similar organization (dedicated matrix support to a PM, PEO, DCMA program integrator, or supervisor of shipbuilding). These 2 years may run concurrent with the preceding 4 years requirement. <p>OR</p> <ul style="list-style-type: none"> ➤ Level III DAWIA certification in another acquisition functional ➤ 2 years in program management with cost, schedule, and performance responsibilities ➤ At least 2 years in program office for systems development and acquisition or similar organization (dedicated matrix support to a PM, PEO, DCMA program integrator, or supervisor of shipbuilding). These 2 years may run concurrent with the preceding Level III or 2 years requirement.

Unique Position Training Standards for Program Manager Level 3
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<ul style="list-style-type: none"> ➤ PEOs; PM/DPM of MDAP/MAIS: PM/DPM of significant nonmajor programs (see note 6 below) • PMT 401 – Program Manager’s Course ® • PMT 402 – Executive Program Manager’s Course ®

Core Plus Development Guide for Program Management Level 3 (Desired training, education, and experience)			
Training	Type of Assignment		
	Wpn Sys	services	Bus Mgt/ IT
ACQ 265 – Understanding Industry ®		√	√
ACQ 370 – Acquisition Law ®	√	√	√
ACQ 452 – Forging Stakeholder Relationships ®	√	√	√
BFM 209 – Acquisition Reporting for MDAPs and MAIS ®	√		√
CLE 008 – Six Sigma: Concepts and Processes	√	√	√
CLE 301 – Reliability and Maintainability	√	√	
CLL 022 – Title 10 Depot Maintenance Statute Overview	√	√	√
CLL 201 – Diminishing Manufacturing Sources and Material Shortages (DMSMS) Fundamentals	√	√	√
ENG 202 – Applied Systems Engineering in Defense Acquisition, Part II ®	√		
ISA 320 – Advanced Program Information Systems Acquisition ®	√	√	√
LOG 200 – Product Support Strategy Development, Part A	√	√	
LOG 201 – Product Support Strategy Development, Part B ®	√	√	
LOG 204 – Configuration Management	√		√
LOG 235 – Performance-Based Logistics	√	√	
PMT 400 – Program Manager’s Skills Course ®	√	√	√
PQM 201A – Intermediate Production, Quality, and Manufacturing, Part A	√		
TST 204 – Intermediate Test and Evaluation ®	√		
<ul style="list-style-type: none"> ➤ Education – At least 24 semester hours from among accounting, business finance, law, contracts, purchasing, economics, industrial management, marketing, quantitative methods, and organization and management (DANTES equivalency may be substituted) ➤ Experience – (2) additional years of acquisition experience, preferably in a system program office or similar organization (in addition to core certification experience) 			

Note: “®” Following a course title indicates the course is delivered as resident-based instruction.
Information on this chart from: <https://icatalog.dau.edu/onlinecatalog/CareerLvl.aspx>



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APPENDIX B. DAWIA CONTRACT MANAGEMENT CERTIFICATION REQUIREMENTS

CERTIFICATE STANDARDS & CORE PLUS DEVELOPMENT GUIDE CONTRACTING LEVEL 1, 2 AND 3	
Type of Assignment	Representative Activities
1. Operational Contracting	➤ Contracting functions in support of post, camp or stations
2. Res & Dev	➤ Contracting functions in support of research and development
3. System Acquisition	➤ Contracting functions in support of systems acquisition to include all ACAT programs
4. Logistics and Sustainment	➤ Contracting functions performed by the Defense Logistics Agency or by other offices to sustain weapon systems
5. Construction A & E	➤ Contracting functions in support of construction and/or architect and engineering services
6. Contingency/Combat Ops	➤ Contracting functions performed in a contingency or combat environment
7. Contract Admin Office	➤ Contracting function is primarily focused on contract administration
8. Contract Cost/Price Analyst	➤ Contracting function is primarily focused on advanced cost/price analysis
9. Small Business Specialist	➤ Contracting function is primarily focused on advising small businesses or on strategies for maximizing use of small businesses
10. Other	➤ Contracting functions that perform a variety of assignments or are at a headquarters, secretariat, or OSD

Core Certification Standards for Contracting **Level 1**



(Required for DAWIA Certification)	
Acquisition Training	None required
Functional Training	CON 091 – Contract Fundamental ®
	CON 121 – Contract Planning
	CON 100 – Shaping Smart Business Arrangements
	CON 124 – Contract Execution
	CON 127 – Contract Management
	CON 170 – Fundamentals of Cost and Price Analysis ®
	CLC 033 – Contract Format and Structure for DoD e-Business Environment
	CLC 056 – Analyzing Contract Costs
	CLC 057 – Performance Based Payments and Value of Cash Flow
	CLM 059 – Fundamentals of Small Business for the Acquisition Workforce
	CLC 058 – Introduction to Contract
Education	<ul style="list-style-type: none"> ➤ The 2019 NDAA removed the requirement for the 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	<ul style="list-style-type: none"> ➤ 1 year of contracting experience

Unique Position Training Standards for Contracting Level 1	
<ul style="list-style-type: none"> ➤ Contracting personnel assigned to support a MDAP/MAIS program • ACQ 101 – Fundamentals of System Acquisition Management 	

Core Plus Development Guide for Contracting Level 1 (Desired training, education, and experience)										
Training	Type of Assignment									
	1	2	3	4	5	6	7	8	9	10
CLC 003 – Sealed Bidding	√			√	√					
CLC 004 – Market Research	√	√	√	√	√	√	√	√	√	√
CLC 005 – Simplified Acquisition Procedures	√	√	√	√	√	√	√		√	√
CLC 009 – Service-Disabled, Veteran-Owned Small Business Program	√	√	√	√	√	√	√		√	√
CLC 020 – Commercial Item Determination	√	√	√	√	√	√	√	√	√	√
CLC 024 – Basic Math Tutorial	√	√	√	√	√	√	√	√		√
CLC 028 – Past Performance Information	√	√	√	√	√	√	√		√	√
CLC 030 – Essentials of Interagency Acquisitions/Fair Opportunity	√	√	√	√	√	√	√	√	√	√



CLC 043 – Defense Priorities and Allocations System	√	√	√	√	√	√	√		√	√
CLC 045 – Partnering	√	√	√	√	√	√	√			√
CLC 046 – DoD Sustainable Procurement Program	√	√	√	√	√	√	√	√	√	√
CLC 054 – Electronic Subcontracting Reporting System (eSRS)	√	√	√	√	√	√	√	√	√	√
CLC 055 – Competition Requirement	√	√	√	√	√	√	√	√	√	√
CLC 060 – Time and Materials Contracts	√	√	√	√	√	√	√	√	√	√
CLC 062 – Intra-Governmental Transactions	√	√	√	√	√	√	√	√	√	√
CLC 113 – Procedures, Guidance, and Information	√	√	√	√	√	√	√	√	√	√
CLC 132 – Organizational Conflicts of Interest	√	√	√	√	√	√	√	√	√	√
CLG 001 – DoD Governmentwide Commercial Purchase Card Overview	√	√	√	√	√	√	√	√	√	√
CLM 023 – DAU AbilityOne Training	√	√	√	√	√	√	√	√	√	√
CON 237 – Simplified Acquisition Procedures	√	√	√	√	√	√	√		√	√
CON 243 – Architect-Engineer Contracting ®					√					
CON 244 – Construction Contracting ®					√					
LOG 100 – Life Cycle Logistics Fundamentals		√	√	√				√		√
LOG 105 – Fundamentals of System Sustainment Management		√	√	√				√		√
SPY 101 – Standard Procurement System and federal Procurement Data System -- Next Generation User	√	√	√	√	√	√	√	√	√	√
➤ Education – Non specified										
➤ Experience – Non specified										

Core Certification Standards for Contracting Level 2 (Required for DAWIA Certification)	
Acquisition Training	ACQ 101 – Fundamental of Systems Acquisition Management
Functional Training	Functional Training identified in Level I must have been completed
	CON 200 – Business Decisions for Contracting
	CON 216 – Legal Considerations in Contracting
	CON 280 – Source Selection and Administration of Service Contracts ®
	CON 290 – Contract Administration and Negotiation Techniques in a Supply Environment ®
	CLC 051 – Managing Government Property in the Possession of Contractors
	HBS 428 – Negotiation
Education	➤ The 2019 NDAA removed the requirement for the 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	➤ 2 years of contracting experience

Unique Position Training Standards for Contracting Level 2	
➤ Contract Price and/or Cost Analysis or related job title	
• CON 270 – Intermediate Cost and Price Analysis ®	
➤ Contracting personnel assigned to support a MDAP/MAIS program	
• ACQ 202 – Intermediate Systems Acquisition, Part A	

Core Plus Development Guide for Contracting Level 2 (Desired training, education, and experience)										
Training	Type of Assignment									
	1	2	3	4	5	6	7	8	9	10
CLC 006 – Contract Terminations	√	√	√	√	√	√	√			√
CLC 008 – Indirect Costs		√	√				√	√		√
CLC 013 – services Acquisition	√	√	√	√	√	√	√	√		√
CLC 026 – Performance-Based Payments Overview	√	√	√	√	√	√	√	√	√	√
CLC 027 – Buy American Statute	√	√	√	√	√	√	√	√	√	√
CLC 031 – Reverse Auctioning	√			√						
CLC 039 – Contingency Contracting Simulation: Barda Bridge						√				
CLC 040 – Predictive Analysis and Scheduling			√			√				√
CLC 041 – Predictive Analysis and Systems Engineering		√	√				√			√
CLC 042 – Predictive Analysis and Quality Assurance			√				√			√
CLC 044 – Alternative Dispute Resolution	√	√	√	√	√	√	√			√
CLC 047 – Contract Negotiation Techniques	√	√	√	√	√	√	√	√	√	√
CLC 059 – Management of Subcontracting Compliance	√	√	√	√	√	√	√		√	√
CLC 066 – Other Transactions (OTs)		√	√				√			
CLC 103 – Facilities Capital Cost of Money	√	√	√	√	√	√	√	√		√
CLC 104 – Analyzing Profit or Fee	√	√	√	√	√	√	√	√		√
CLC 107 – OPSEC Contract Requirements	√	√	√	√	√	√	√			√
CLC 108 – Strategic Sourcing Overview	√	√	√	√	√	√	√	√	√	√
CLC 110 – Spend Analysis Strategies	√	√	√	√	√	√	√	√	√	√
CLC 112 – Contractors Accompanying the Force	√	√	√	√	√	√	√			√
CLC 114 – Contingency Contracting Officer Refresher						√				



CLC 120 – Utilities Privatization Contract Administration							√			
CLC 125 – Berry Amendment	√		√	√	√	√	√			√
CLL 011 – Performance Based Logistics (PBL)	√	√	√	√				√		√
CLM 031 – Improved Statement of Work	√	√	√	√	√	√				
CLM 040 – Proper Financial Accounting Treatments for Military Equipment	√	√	√	√	√	√	√	√		√
CLM 200 – Item-Unique Identification	√	√	√	√	√	√	√	√	√	√
CON 0070 – Source Selection	√	√	√	√	√	√	√	√	√	√
CON 234 – Joint Contingency Contracting Course ®						√				
CON 252 – Fundamentals of Cost Accounting Standards ®		√	√				√	√		
CON 320 – Advanced Indirect Cost Analysis ®		√	√				√	√		
GRT 201 – Grants and Agreements Management ®		√					√			
HBS 433 – Presentation Skills	√	√	√	√	√	√	√	√	√	√
HBS 440 – Team Leadership	√	√	√	√	√	√	√	√	√	√
HBS 441 – Team Management	√	√	√	√	√	√	√	√	√	√
LOG 235 – Performance-Based Logistics	√	√	√	√				√		√
PMT 0130 – Work-Breakdown Structure			√				√	√		
SBP 101 – Introduction to Small Business Programs, Part A									√	
➤ Education – Graduate studies in business administration or procurement										
➤ Experience – Two (2) additional years of contracting experience										

Core Certification Standards for Contracting Level 3 (Required for DAWIA Certification)	
Acquisition Training	ACQ 202 – Intermediate Systems Acquisition, Part A
Functional Training	Functional Training identified in Level II must have been completed
	CON 360 – Contracting for Decision Makers ®
	1 additional course from the Harvard Business Management Modules
	Elective Requirement. Select one of the below courses:
	ACQ 265 – Mission-Focused services Acquisition ®
	ACQ 315 – Understanding Industry ®
	ACQ 370 – Acquisition Law ®
	CON 244 – Contracting Contracting ®
	CON 252 – Fundamentals of Cost Accounting Standards ®
	CON 320 – Advanced Indirect Cost Analysis ®
	CON 334 – Advance Contingency Contracting Officer's Course ®
	CON 370 – Advanced Cost and Price Analysis ®



Education	<ul style="list-style-type: none"> ➤ The 2019 NDAA removed the requirement for the 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	<ul style="list-style-type: none"> ➤ 4 years of contracting experience

Unique Position Training Standards for Contracting Level 3	
<ul style="list-style-type: none"> ➤ Contract Price and/or Cost Analysis or related job title • CON 370 – Advanced Cost and Price Analysis ® 	
<ul style="list-style-type: none"> ➤ Contracting personnel assigned to devoting at least 50 percent of their time in support of a MDAP/MAIS program • ACQ 203 – Intermediate Systems Acquisition, Part B 	

Core Plus Development Guide for Contracting Level 3 (Desired training, education, and experience)										
Training	Type of Assignment									
	1	2	3	4	5	6	7	8	9	10
ACQ 450 – Leading in the Acquisition Environment ®	√	√	√	√	√	√	√	√	√	√
ACQ 451 – Integrated Acquisition for Decision Makers ®	√	√	√	√	√	√	√	√	√	√
ACQ 452 – Forging Stakeholder Relationships ®	√	√	√	√	√	√	√	√	√	√
ACQ 453 – Leader as Coach ®	√	√	√	√	√	√	√	√	√	√
BFM 0040 – Budget Policy			√							
CLB 007 – Cost Analysis	√	√	√	√	√	√	√	√		√
CLL 001 – Predictive Analysis and Scheduling			√	√						
CLV 016 – Introduction to Earned Value Management			√		√		√			
EVM 101 – Fundamentals of Earned Value Management			√				√			
HBS 309 – Coaching For Results	√	√	√	√	√	√	√	√	√	√
HBS 406 – Coaching	√	√	√	√	√	√	√	√	√	√
➤ Education – Master degree in business administration or procurement										
➤ Experience – Four (4) additional years of contracting experience										

Note: “®” Following a course title indicates the course is delivered as resident-based instruction.

Information on this chart from: <https://icatalog.dau.edu/onlinecatalog/CareerLvl.aspx>



LIST OF REFERENCES

- Aufderheide, D., Maloy, J., & Corrigan, M. (2011). *Air Force operational contracting knowledge assessment: Analyzing explicit and tacit contracting knowledge* [Master's thesis, Naval Postgraduate School]. <http://hdl.handle.net/10945/10729>
- Air Force Personnel Center. (2007, July 31). *The Air Force officer classification directory*. <https://www.uc.edu/content/dam/uc/afrotc/docs/Documents/AFOCD.pdf>
- Air Force Personnel Center. (2012, August 1). *The Air Force officer classification directory*. https://afrotc.siu.edu/_common/documents/af-officer-classification-directory.pdf
- Assistant Secretary of the Navy for Research, Development & Acquisition. (n.d.). *Acquisition corps*. Secretary of the Navy. <https://www.secnav.navy.mil/rda/workforce/Pages/Career%20Management/AcquisitionCorps.aspx>
- Berger, J., Mason, T., McCann, R., Purcell, F. E., Jr., & Adabi, M. (2019, December 26). *FY 2020 NDAA signed into law with U.S. Space Force, cyber operations & acquisition reforms*. Lexology. <https://www.lexology.com/library/detail.aspx?g=b85d292f-5d37-4fda-9308-d304f3235bf1>
- Carroll, M., & Hicks, K. (2018, December). *Army acquisition officer educational path optimization*. Monterey, CA; [Master's thesis, Naval Postgraduate School]. <https://calhoun.nps.edu/handle/10945/61326>
- Christensen, D. S., Searle, D. A., & Vickery, D. C. (1999). The impact of the Packard Commission's recommendations on reducing cost overruns on defense acquisition contracts. *Acquisition Review Quarterly*, 6(3), 251.
- Cohen, S., & Eimicke, W. (2008). The responsible contract manager protecting the public interest in an outsourced world. Georgetown University Press.
- Defense Acquisition University. (n.d). *Certification standards & core plus development guide, program management level III*. Defense Acquisition University iCatalog. <https://icatalog.dau.edu/onlinecatalog/CareerLvl.aspx?lvl=3&cflid=9>
- Defense Acquisition Workforce, 10 U.S.C. § 1701–1761 (2019). <https://uscode.house.gov/view.xhtml?path=/prelim@title10/subtitleA/part2/chapter87&edition=prelim>



Director, Defense Procurement and Acquisition Policy. (2012, March 22). *Department of Defense COR handbook*.
https://www.acq.osd.mil/dpap/cpic/cp/docs/USA001390-12_DoD_COR_Handbook_Signed.pdf

Department of Defense. (2018). *Defense Acquisition Workforce Position Category Description (PCD)*.
https://www.secnave.navy.mil/rda/workforce/Documents/StrategyPolicy/PCDs_CoCombin.pdf

Department of Defense. (2017, July 14). *Department of Defense Handbook for the Training and Development of the Services Acquisition Workforce*.
<https://www.dau.edu/cop/ace/DAU%20Sponsored%20Documents/DoD%20Handbook%20for%20the%20Training%20and%20Dev%20of%20the%20SA%20Workforce.pdf>

Department of Defense. (2019, September 13). *DoD Acquisition workforce strategic plan FY2016-FY2021*.
https://www.hci.mil/docs/DoD_Acq_Workforce_Strat_Plan_FY16_FY21.pdf

Department of Defense. (2020a, January 23). *Operation of the Adaptive Acquisition Framework (DoD Instruction 5000.02)*.
<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/DoDi/500002p.pdf?ver=2019-10-25-134150-283>

Department of Defense. (2020b, April 21). *Operation of the Adaptive Acquisition (DoD Instruction 5000.02T)*.
<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/DoDi/500002T.pdf?ver=2020-04-22-083324-963>

Department of Defense Directive 5000.02. (2020, January 23). *Operation of the Adaptive Acquisition Framework*.
<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/DoDi/500002p.pdf?ver=2019-10-25-134150-283>

Department of the Air Force. (2012). *Acquisition managers: Career field education and training plan* (CFETP 63AX & 1101). <https://pdf4pro.com/amp/cdn/acquisition-managers-63ax-amp-1101-af-2203e9.pdf>

Department of the Air Force. (2014). *Contracting: Career field education and training plan* (CFETP 64PX).
https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwipwLeckrzqAhUDvp4KHUttDaYQFjAAegQIAxAB&url=https%3A%2F%2Fvt.instructure.com%2Fcourses%2F35942%2Ffiles%2F3237910%2Fdownload%3Fdownload_frd%3D1&usg=AOvVaw123vQPB9mcB9ja-OOHvo1p



Department of the Army. (2010, February 1). *Officer professional development and career management* (Pamphlet 600-3). <https://ssilrc.army.mil/wp-content/uploads/2019/10/DA-PAM-600-3-Officer-Professional-Development-and-Career-Management-3-April-2019.pdf>

Department of the Army. (2018, September 17). *Army acquisition procedures* (Pamphlet 70-3).
https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/ARN11426_DAPam70-3_FINAL.pdf

Department of the Army. (2019, April 3). *Officer professional development and career management* (Pamphlet 600-3). <https://ssilrc.army.mil/wp-content/uploads/2019/10/DA-PAM-600-3-Officer-Professional-Development-and-Career-Management-3-April-2019.pdf>

Department of the Army. (2020a, March 4). *Army acquisition corps*.
<https://asc.army.mil/web/wp-content/uploads/2020/04/Acquisition-Corps-DA-PAM-600-3.pdf>

Department of the Navy. (2006, August 9). *Marine Corps promotion manual, Volume 1, officer promotions* [MCO P1400.31C].
<https://www.hqmc.marines.mil/Portals/135/MCO%20P1400.31C.pdf>

Department of the Navy. (2019a, March 25). *Department of the Navy (DON) Defense Acquisition Workforce Improvement Act (DAWIA) Operating Guide*.
https://www.secnav.navy.mil/rda/workforce/Documents/StrategyPolicy/DON_DAWIA_OP_GUIDE_SIGNED_03.25.19.pdf

Department of the Navy. (2019b, March 29). *Military occupational specialties manual* (NAVMC 1200.1E).
https://www.trngcmd.marines.mil/Portals/207/Docs/wtbn/MCCMOS/FY20%20MOS%20Manual%20NAVMC_1200_1E_Signed.pdf?ver=2019-04-17-130202-033

Department of the Navy. (2019c, May 30). *Marine Corps graduate education program* (MCGEP).
<https://www.marines.mil/portals/1/Publications/MCO%201524.1.pdf?ver=2019-06-03-083458-743>.

Deputy Commandant Manpower and Reserve Affairs. (2020a, June 2). *FY21 commandants' career-level education board* (MARADMINS 324/20). U.S. Marine Corps. <https://www.marines.mil/News/Messages/Messages-Display/Article/2204706/fy21-commandants-career-level-education-board/>



- Deputy Commandant Manpower and Reserve Affairs. (2020b, June 10). *Announcement of Fiscal Year 2020 officer retention board number 2* (MARADMIN 344/20). U.S. Marine Corps. <https://www.marines.mil/News/Messages/Messages-Display/Article/2215255/announcement-of-fiscal-year-2020-officer-retention-board-number-2/#:~:text=The%20CD%20sub%2Dboard%20enables,initial%20period%20of%20obligated%20service>
- Deputy Commandant Manpower and Reserve Affairs. (2020c, August 6). FY21 Acquisition Primary MOS selection (8069 and 8061) board solicitation (MARADMIN 455/20). U.S. Marine Corps. <https://www.marines.mil/News/Messages/Messages-Display/Article/2303567/fy21-acquisition-primary-mos-selection-8059-and-8061-board-solicitation/>
- Everling, J., Rosa, L., Clark, A., & Ford, D. (2017). *Modeling the Department of Navy acquisition workforce with system dynamics*. [Master's thesis, Naval Postgraduate School]. <https://calhoun.nps.edu/handle/10945/58782>
- Ferrara, J. (1996). *DoD's 5000 documents: Evolution and change in defense acquisition policy*. Office of the Under Secretary of Defense for Acquisition and Technology. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a487769.pdf>
- Fox, J. R. (2011). *Defense acquisition reform, 1960–2009: An elusive goal*. Center for Military History, U.S. Army. https://history.army.mil/html/books/051/51-3-1/CMH_Pub_51-3-1.pdf
- Gambles, K., Johnson, Ellsworth K., I,II, & Jones, E. A. (2009). Military proponentcy-functional area (FA) 51. Army AL & T, , 25–29. Retrieved from [https://asc.army.mil/docs/pubs/alt/2009/4_OctNovDec/articles/25_Military_Propoency--Functional_Area_\(FA\)_51_200904.pdf](https://asc.army.mil/docs/pubs/alt/2009/4_OctNovDec/articles/25_Military_Propoency--Functional_Area_(FA)_51_200904.pdf)
- Garcia, A., Keyner, H., Robillard, T., & VanMullekom, M. (1997). The Defense Acquisition Workforce Improvement Act: Five years later. *Acquisition Review Quarterly*, 295–314. <http://www.dtic.mil/docs/citations/ADA487925>
- Gates, S. M., Phillips, B., Powell, M. H., Roth, E., & Marks, J. S. (2018). *Analyses of the Department of Defense acquisition workforce: Update to methods and results through FY 2017* (RR-2492-OSD). RAND. https://www.rand.org/pubs/research_reports/RR2492.html
- Government Accountability Office. (2000). *Federal acquisition: Trends, reforms, and challenges* (GAO/T-OCG-00-7). <https://www.gao.gov/archive/2000/cg00007t.pdf>
- Government Accountability Office. (2011). Defense acquisition workforce: Better identification, development, and oversight needed for personnel involved in acquiring services (GAO-11-892). <https://www.gao.gov/assets/590/585429.pdf>



- Government Accountability Office. (2013). Defense acquisitions: Goals and associated metrics needed to assess progress in improving service acquisition (GOA-13-634). <https://www.gao.gov/assets/660/655605.pdf>
- Government Accountability Office. (2018). Defense acquisition workforce: Opportunities exist to improve practices for developing program managers (GAO-18-217). <https://www.gao.gov/assets/700/690094.pdf>
- Government Accountability Office. (2019a, March 25). *Defense acquisitions: Information on workforce, organizational structure, and budgeting for selected programs* (GAO-19-209). <https://www.gao.gov/assets/700/697838.pdf>
- Government Accountability Office. (2019b, March 6). *High-risk series: Substantial efforts needed to achieve greater progress on high-risk areas* (GAO-19-157SP). <https://www.gao.gov/assets/700/697245.pdf>
- Government Accountability Office. (2019c, August 15). *Defense acquisition workforce: DoD increased use of human capital flexibilities but could improve monitoring* (GAO-19-509). <https://www.gao.gov/assets/710/700927.pdf>
- Government Accountability Office. (2019d, October 2). *Steps needed to identify acquisition training needs for non-acquisition personnel* (GAO-19-556). <https://www.gao.gov/assets/710/701178.pdf>
- Government Accountability Office. (2020). *Reports & Testimonies - Recommendations Database*. <https://www.gao.gov/reports-testimonies/recommendations-database/>
- Hine, T. (2019). FY 2020 NDAA Signed into Law with U.S. Space Force, Cyber Operations & Acquisition Reforms. *Lexology*. <https://www.lexology.com/library/detail.aspx?g=b85d292f-5d37-4fda-9308-d304f3235bf1>
- Human Capitol Initiative. (2020). *Workforce Metrics*. <https://www.hci.mil/about/workforce-metrics.html>
- Johnson, E., Paton, B., Threat, E., & Haptonstall, L. (2005). *Joint contingency contracting* [Master's thesis, Naval Postgraduate School]. NPS Archive: Calhoun. <https://calhoun.nps.edu/handle/10945/34229>
- Kaul, M. D., & Wilson, B. J. (2013, December 1). Qualification requirement perceptions of the United States Army acquisition workforce since implementation of the Defense Acquisition Workforce Improvement Act (DAWIA) [Master's thesis, Naval Postgraduate School]. <http://hdl.handle.net/10945/38962>
- Kendall, F. (2013, February). Moving forward. *Defense AT&L*, 42(1), 2–3. https://www.dau.edu/library/defense-atl/DATLFiles/Jan_Feb_2013/Kendall.pdf



- Layton, E. (2007). *The Defense Acquisition University: training professionals for the acquisition workforce, 1992–2003* (1st ed.). Defense Acquisition University Press. <https://www.dau.edu/about/Documents/DAU%20History%20Book.pdf>
- Linden, K. (2020, April 3). DAU contracting certification training program: Foundational training and single-level certification signifying an Individual has achieved initial readiness for a contracting career. Defense Acquisition University.
- Lohier, J. M. & Johnson, B. J. (2019). The contracting officers and contract managers of the future. *Contract Management*, 59 (9), 30–36. <http://search.proquest.com/docview/2282756421/>
- Marine Corps Systems Command. (n.d.-a). *Acquisition MOS*. <https://www.marcorsyscom.marines.mil/Command-Staff/Acquisition-MOS/>
- Marine Corps Systems Command. (n.d.-b). Marine Corps system command, equipping our marines. *Marines.mil*. <https://www.marcorsyscom.marines.mil/>
- Marine Corps Systems Command. (n.d.-c). Marine Corps system command, acquisition career roadmap. *Marines.mil*. <https://www.marcorsyscom.marines.mil/Command-Staff/Acquisition-MOS/020213023002/>
- Mehta, A. (2017, August 2). This is the Pentagon’s new acquisition structure. *Defense News*. <https://www.defensenews.com/breaking-news/2017/08/02/this-is-the-pentagons-new-acquisition-structure/>
- Military.com. (2020, July 8). *DANTES DSST exam list*. <https://www.military.com/education/timesaving-programs/dantes-dsst-exam-list.html>
- My Army Benefits. (2020, August 31). *Advanced civil schooling*. [https://myarmybenefits.us.army.mil/Benefit-Library/Federal-Benefits/Advanced-Civil-Schooling-\(ACS\)?serv=122](https://myarmybenefits.us.army.mil/Benefit-Library/Federal-Benefits/Advanced-Civil-Schooling-(ACS)?serv=122)
- National Contract Management Association. (2019). *Contract management body of knowledge (CMBOK)* (6th ed.).
- National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116–92, §1790, 133 Stat. 1198 (2019, December 20). <https://www.congress.gov/116/bills/s1790/BILLS-116s1790enr.pdf>
- Naval History and Heritage Command. (2020). *Supply Corps*. <https://www.history.navy.mil/browse-by-topic/communities/supply-corps.html>
- Navy Personnel Command. (2019, October 21). *Acquisition FAQ*. <https://www.public.navy.mil/bupers-npc/officer/Detailing/acquisition/Pages/default2.aspx>



- Navy Personnel Command. (2020). Manual of Navy officer manpower and personnel classifications, volume I, major code structures. Department of the Navy.
- Ocasio, R., & Bubnitz, R. (2013, September 1). Defense Acquisition Workforce Improvement Act (DAWIA) certification: A comparative analysis of certification versus qualification [Master's thesis, Naval Postgraduate School]. <http://hdl.handle.net/10945/37688>
- Office of Supply Corps Personnel. (2011) *It's your career*. Navy Personnel Command. <https://www.public.navy.mil/bupers-npc/officer/Detailing/rlstaffcorps/supply/Documents/It's%20Your%20Career%201%20Nov%2011.pdf>
- Office of the Deputy Secretary of Defense. (1991, October 22). *Defense Acquisition University* (DoD Directive 5000.57). https://biotech.law.lsu.edu/blaw/DoD/corres/pdf/d500057_102291/d500057p.pdf
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2019, September). *Defense acquisition workforce education, training, experience, and career development program* (DoD Instruction 5000.66). <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/DoDi/500066.pdf>
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2020a, January 23). *Operation of the adaptive acquisition framework* (DoD Instruction 5000.02). <https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/DoDi/500002p.pdf?ver=2019-10-25-134150-283>
- Office of the Under Secretary of Defense for Acquisition and Sustainment. (2020b, September 2). “*Back-to-basics*” for the defense acquisition workforce [Memorandum]. https://4edacm.dau.edu/assets/Back_to_Basics_Memo_2_Sep_2020.pdf
- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. (2013, April 24). *Implementation directive for Better Buying Power 2.0—Achieving greater efficiency and productivity in defense spending* [Memorandum]. https://business.defense.gov/Portals/57/Documents/Attachment%209_BBP%202%20Implementation%20Directive.pdf
- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. (2015, April 9). *Implementation directive for the Better Buying Power 3.0—Achieving dominant capabilities through excellence and innovation* [Memorandum]. [https://www.acq.osd.mil/fo/docs/betterBuyingPower3.0\(9Apr15\).pdf](https://www.acq.osd.mil/fo/docs/betterBuyingPower3.0(9Apr15).pdf)
- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. (2016, September 13). *Department of Defense acquisition workforce strategic plan, FY2016–FY2021*. https://www.hci.mil/docs/DoD_Acq_Workforce_Strat_Plan_FY16_FY21.pdf



- Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics. (2017, August 10). *Operation of the defense acquisition system* (DoD Instruction 5000.02T). <http://acqnotes.com/acqnote/acquisitions/DoDi-5000>
- Pasindorubio, Z., Yu, R., & Carnazza, G. (2018). *Marine corps acquisition optimization*. Monterey, CA; Naval Postgraduate School. <http://hdl.handle.net/10945/61305>
- Phillips, J. (2019, February 6). Simulation and scenario-based training. Defense Acquisition University. <https://www.dau.edu/library/defense-atl/blog/Simulation-and-Scenario-Based-Training>
- Reed, T. (2010). *Army Contracting Command Workforce Model Analysis*. Monterey, California. Naval Postgraduate School. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a628348.pdf>
- Rendon, R., & Snider, K. (2019). *Management of defense acquisition projects* (Second edition.). American Institute of Aeronautics and Astronautics, Inc.
- Schwartz, M., Francis, K. A., & O'Connor, V. (2016). The Department of Defense acquisition. Workforce: Background, analysis, and questions for Congress (CRS Report R44578). Washington, DC. Congressional Research Service.
- Schwartz, T. (2017, July 21). How to become a more well-rounded leader. Harvard Business Review. <https://hbr.org/2017/07/how-to-become-a-more-well-rounded-leader>
- Spotlight on DAU learning resources. (2008, March 4). *Defense AT&L*, XXXVII(2), 64–65. https://www.dau.edu/library/defense-atl/_layouts/15/WopiFrame.aspx?sourcedoc=/library/defense-atl/DATLFiles/2008_03_04/mar-apr08.pdf&action=default
- U.S. Air Force. (n.d.). *Ongoing education: Pursue your greatness*. <https://www.airforce.com/education/ongoing-education>
- U.S. Army Acquisition Support Center. (2020). *Officer in the Army acquisition workforce*. <https://asc.army.mil/web/career-development/military-officer/information>
- U.S. Army Modeling and Simulation Office. (n.d.). *Intermediate level education/advanced operations warfighting course*. <https://www.ms.army.mil/sp-div2/fa57/ile-aowc.html>
- Zehnder, E. (n.d.). *Parallel worlds - Interview with Colin Powell*. <https://www.egonzehnder.com/cdn/serve/article-pdf/1513691169-e72e764a20c3270895573d18bcfd25f7.pdf?dl=>





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