



**USAF AIRCRAFT MAINTENANCE OFFICER
KNOWLEDGE, SKILLS AND ABILITIES
AND
COMMONALITIES AMONG THE
LOGISTICS OFFICER CORPS**

THESIS

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AFIT-ENS-13-M-22

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THESIS

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Abstract

This study investigated options to improve 21A training and education by first validating the Air Force's logistics mission sets as Deployment, Distribution, Supply Management, Repair Network Integration, Mission Generation, Lifecycle Logistics and Joint Logistics. Then, the Knowledge, Skills, and Abilities (KSAs) considered important to execute each mission set were gathered from a representative sample of Air Force Logistics Officers via field interviews and focus groups. An analysis of results categorizes probable needs (high, medium, low) of KSAs for each mission set and assesses how well they are currently taught, if at all. Additionally, lists of KSAs that overlap multiple mission sets were created along with process options for integrating them into training and education. Based on a discussion of the synergistic effects on acquiring these KSAs, it is also recommended that the Logistics Readiness Squadron be realigned under a common group at the operational wing with the rest of the Logistics Units (presently the Maintenance Group). Finally, a career tracking model is proposed to deliberately build experts in strategic 21A career paths, which this study identifies as Career Maintenance Officers, Air Force Materiel Managers and Joint Logistics Officers.

To the Healer of the sick, the Shepherd of lost sheep, the Savior of sinners--Jesus. Without you, I would be nothing more than a breath, a vapor, a foolish builder only chasing after the wind. Thank you for loving me first.

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Abbreviations and Acronyms

11M	Mobility Pilot (AFSC)
20C	Logistics Commander (AFSC)
21A	Aircraft Maintenance Officer (AFSC)
21A/M	Maintenance Officers (includes 21A and 21M AFSCs)
21M	Munitions and Missile Maintenance Officer (AFSC)
21R	Logistics Readiness Officer (AFSC)
21X	Any AFSC with a 21 prefix (includes 21A, 21M, 21R)
63A	Acquisitions Manager (AFSC)
A4	Directorate of Logistics (Various Commands)
A4/7	Deputy Chief of Staff for Logistics, Installations and Mission Support, Headquarters U.S. Air Force
AAD	Advanced Academic Degree
ACC	Air Combat Command
ACE	Air Combat Element (USMC)
ACSC	Air Command and Staff College
AETC	Air Education and Training Command
AF	Air Force
AF/A4LF	Force Development and Organizations Division, Directorate of Logistics, Headquarters U.S. Air Force
AFB	Air Force Base
AFGSC	Air Force Global Strike Command
AFIT	Air Force Institute of Technology
AFIT/ENS	Department of Operational Sciences, Graduate School of Engineering & Management, Air Force Institute of Technology
AFIT/LS	School of Systems and Logistics, Air Force Institute of Technology
AFMC	Air Force Materiel Command
AFOCD	Air Force Officer Classification Directory
AFRC	Air Force Reserve Command
AFSC	Air Force Specialty Code
AFSOC	Air Force Special Operations Command
ALC	Air Logistics Complex
ALEET	Acquisitions and Logistics Experience Exchange Tour
ALROC	Advanced Logistics Readiness Officer's Course
ALU/JLC	Army Logistics University, Joint Logistics Course
AMC	Air Mobility Command
AMDO	Aerospace Maintenance Duty Officer (USN)
AMMOS	Aircraft Maintenance and Munitions Officers School
AMXG	Aircraft Maintenance Group
AMXS	Aircraft Maintenance Squadron
ANG	Air National Guard
APS	Aerial Port Squadron
ASAM	Advanced Study of Air Mobility (an AFIT/ENS satellite program)

CFETP	Career Field Education and Training Program
CFLI	Core Function Lead Integrator
CGO	Company Grade Officer
Civ	Government Civilian
CLC3	Combined Logistics Captains Career Course
CLR	Air Force Chief of Staff Logistics Review
Col	Colonel
CRW	Contingency Response Wing
Ct	Count (total frequency of write-ins by all focal groups)
CWO	Combat Wing Organization
DCoL	Deliberate Continuum of Learning
DLA	Defense Logistics Agency
DoD	Department of Defense
DoDOCCs	DoD Occupational Codes
ECSS	Expeditionary Combat Support System
ERP	Enterprise Resource Planning
FOB	Forward Operating Base
GO	General Officer
Gps	Focal Groups
HAF	Headquarter Air Force
HCS	DoD Logistics Human Capital Strategy
HR	Human Relations
IG	Inspector General
IPT	Integrated Product Team
IQ	Investigative Question
IT	Information Technology
J4	Joint Directorate of Logistics (Joint Staff or Combatant Commands)
JBC	Joint Base Charleston, SC
JBLE	Joint Base Langley-Eustis, VA
JBMDL	Joint Base McGuire-Dix-Lakehurst, NJ
JCS/J4	Joint Chiefs' of Staff Logistics Directorate
JIIM	Joint, Interagency, Intergovernmental, Multi-National
KSAs	Knowledge, Skills and Abilities
LCE	Logistics Combat Element (USMC)
LCL	Lifecycle Logistics
LOA	Logistics Officers Association
LOGTECOE	Logistics Training and Education Center of Excellence (USMC)
LRS	Logistics Readiness Squadron
LtCol	Lieutenant Colonel
MAGTF	Marine Air Ground Task Force
Maj	Major
MICAPs	Mission Capable (parts needed to return system to this status)
MOS	Military Occupational Specialty (US Army) --- Series (US Marine Corps); Maintenance Operations Squadron (USAF)
MXG	Maintenance Group
MXS	Maintenance Squadron

MXW	Maintenance Wing
n	number of personnel
OAR	Occupational Analysis Report (AETC)
OQ	Office Question
Org	Organization
PACAF	Pacific Air Forces
PME	Professional Military Education
PMXG	Propulsion Maintenance Group
RNI	Repair Network Integration
SCM	Supply Chain Management
SCMG	Supply Chain Management Group
SCMW Supply	Chain Management Wing
SCOG	Supply Chain Operations Group
SCOS	Supply Chain Operations Squadron
SCOW	Supply Chain Operations Wing
TBS	The Basic School, Quantico, VA (USMC)
TPFDD	Time-phased force & deployment data
Trans	Transportation
TRANSCOM J5/4	Strategy, Policy, Programs, and Logistics Directorate, USTRANSCOM
USA	United States Army
USAF	US Air Force
USAF/EC	US Air Force Expeditionary Center
USAFE	United States Air Forces in Europe
USMC	United States Marine Corps
USN	United States Navy
USTRANSCOM	US Transportation Command
UTC	Unit Type Code
WRM	War Reserve Material

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I. Introduction

Background

Increased emphasis is being placed on logistics in both the public and private sectors. To drive change, leaders in the Department of Defense (DoD) are placing stock in equipping their logisticians with the knowledge, skills and abilities (KSAs) to ensure organizational success.

Within the DoD, each service as well as Secretary of Defense and Joint Service organizations have examined the training and education needs of their Logistics Force. Setting the undertone for much research to follow, the Deputy Under Secretary of Defense for Logistics and Materiel Readiness summarized the DoD Logistics Human Capital Strategy (HCS) in 2008. In it he stressed:

As the world changes rapidly, profoundly, and in every dimension—social, economic, and political—the logistics workforce needs to continuously evolve and operate in a way that optimizes the human capital of the entire enterprise rather than individual parts. It is imperative that the logistics workforce align its human capital with transformed warfighting, modernized weapons systems, business rules, emerging enterprise management systems, and executive-level strategic goal. (Office of the Secretary of Defense, 2008; ii)

Within the Air Force, the Logistics Force Development Division (AF/A4LF) believes a common need exists for change in both the Aircraft Maintenance (21A) and

Logistics Readiness (21R) Officer training and education strategies. When considering shrinking numbers of officers, an aging fleet of aircraft, and a never-before-seen era of heavy fiscal constraints, their team saw the critical task of deliberately training and educating a cadre of leaders able to meet the challenges of a dynamically changing and increasingly joint logistics enterprise (Cooper, 2012).

In concert with findings by the lead of Joint Chiefs' of Staff Logistics Directorate (JCS/J4), the Navy, Industry and Academia, A4LF agreed that today's logistics leaders require more purposeful and focused preparation than in the past (Cooper, 2012).

Examining the Air Force's practices for 2011, A4LF discovered that Logistics Officers (21X; inclusive of 21A and 21R career fields) attended more than 200 different DoD funded logistics courses; 90 of these courses are Air Force funded and many overlap in content taught (Cooper, 2012). In light of budgetary issues alone, a more consolidated course catalog is desirable if not necessary.

Further driving the need for reform, Joint and Air Force senior leaders historically have not selected Logistics Officers to serve as Joint Directors of Logistics (J4) for Combatant Commands (Cooper, 2012). Currently, the Air Force has officers chairing three of the ten J4 directorates. One of these general officers is a 21X officer and is the first in history to hold such an office. Today, there are twelve general officers bearing core 21A/M Air Force Specialty Codes (AFSCs) and one who is a 21R. One general officer interviewed during this study postulated that selection boards maybe viewing "Aircraft Maintenance" as too narrow of a career field to lead joint logistics efforts. Conversely, 21Rs foster many joint force skills sets, yet rarely get promoted above the rank of Colonel, and so aren't producing eligible general officers to lead the joint logistics fight.

One answer to this problem suggests growing officers with overlapping mission sets from the onset of their careers; not growing the career fields as mutually exclusive, but instead as compliments to power the bigger logistics machine. Without combining the career fields, the desire became an intentional promoting of 21A understanding of the 21R mission needs and vice versa through training and education purposively throughout their careers (Cooper, 2012). A4LF began by defining Air Force Logistics missions for the foreseeable future as mission sets that enable:

- Deployment
- Distribution
- Supply Management
- Repair Network Integration (RNI)
- Mission Generation
- Lifecycle Logistics (LCL)
- Joint Logistics

Formal definitions for the first six mission sets have been captured in the 21A and 21R Career Field Education and Training Program (CFETP) documents by A4LF, while the definition of joint logistics for this study is taken from the Joint Chiefs of Staff Joint

Logistics publication:

Contingency Operations [aka Deployment]. Directs contingency operations such as logistics planning, deployment command and control, Logistics Readiness Centers, logistics command and control, Combat Support Center activities, deployment, bed-down, and redeployment activities. Integrates Agile Combat Support planning efforts, conducts readiness assessment of logistics activities, conducts war and contingency planning, base support and expeditionary site planning, War Reserve Material (WRM) management, support agreement management, manages logistics time phased force deployment data and unit type codes. Enables international theater security cooperation and interoperability, operating in coalition or Joint

environments often working with contractors, host-nations, etc. (Department of the Air Force, 2009b; 11)

Distribution Management. Directs distribution management operations to include managing cargo distribution functions such as receiving, inspecting, tracing, tracking, packaging, and shipping of supplies, equipment and war readiness spares. Responsible for logistics pipeline management and time-sensitive delivery of materiel in support of peace, contingency, and wartime operations. Maintains accountability for supplies and equipment. Responsible for the safe and efficient organic ground transportation of personnel and cargo within and between installations in support of daily and contingency operations. Resolves problems related to storage, safety, and fire hazards. Manages storage space utilization and develops and maintains a storage facility and mechanized material handling equipment modernization program to include maintenance, future upgrades, and working stock requirements. Determines readiness requirements, including emergency supply support plans, tactical and strategic movement of personnel, materiel, and units. Schedules and coordinates movement of cargo, personnel, and personal property by commercial or military modes using systems which interface with defense total asset visibility systems. Uses in-transit visibility systems. Maintains liaison with US Transportation Command (USTRANSCOM), other services and federal agencies to schedule and coordinate movements of cargo and personnel. Ensures proper allocation and effective use of transportation resources. Establishes and administers an effective packaging and preservation program. Evaluates movement forecasts and flow of personnel and cargo into the transportation system, movement capabilities, and efficiency of modes used. (Department of the Air Force, 2009b; 10)

Materiel Management [aka *Supply Management*]. Directs materiel management operations such as, direction and management of retail or wholesale supply activities. Included are environmental compliance and inventory management. Determines, computes, and analyzes current and projected materiel requirements; applies authorizations and allowances; establishes and maintains stock levels; manages asset positioning; inspects, reviews, and evaluates work methods and procedures. Ensures accountability is maintained for supplies, equipment, and War Reserve Materiel (WRM). Determines effectiveness of functional data systems. Manages assigned information systems and applies approved standards and criteria to ensure proper implementation, operation, and results. Develops plans, programs, policies and procedures to manage materiel management activities, including systems design and analysis, determination and computation of requirements, plans for activation and inactivation, facility requirements, equipment allowances, and materiel accounting. Develops working capital fund operating programs and determines operating budget. Provides guidance on handling of readiness materiel stocks, including location, type of storage, protection, security, and quality control. (Department of the Air Force, 2009b; 10)

Repair network includes off-aircraft maintenance; repairing parts and components, bench testing and checking parts, rebuilding parts, engine repair and spare utilization, fuel cell and fuel system related repairs, heavy maintenance and inspection functions, and aircraft corrosion control program. (Department of the Air Force, 2009a; 14)

Mission generation includes responsibility for on-aircraft maintenance and may include off-aircraft maintenance; preparing aircraft for flight, routine flight line maintenance, refueling operations, towing, servicing hydraulics and oil, and launching and recovering aircraft. Mission generation also includes responsibility for the weekly, monthly, and long-range flying maintenance and training schedules, aircraft utilization, certifying air-worthiness, and monitoring aircraft modifications and retrofit programs. (Department of the Air Force, 2009a; 14)

Acquisition/Life Cycle Logistics. Directs acquisition/life cycle logistics activities. Plans for and manages systems, subsystems, and equipment throughout their life cycle, including integrated logistics support activities and modernization/obsolescence planning. Develops, initiates, integrates, and manages all logistics actions associated with life cycle management of weapon systems, subsystems, and equipment. Serves as logistics focal point throughout the system's life cycle. Formulates logistics management and fiscal policy for weapon systems. (Department of the Air Force, 2009b; 12)

Joint logistics delivers sustained logistic readiness for the combatant commander and subordinate joint force commanders through the integration of national, multinational, Service, and combat support agency capabilities. The integration of these capabilities ensures forces are physically available and properly equipped, at the right place and time, to support the joint force. (Joint Chiefs of Staff, 2008; vii)

Problem Statement

If 21As are expected to serve in the various roles of Aircraft Maintainer, Air Force Logistician and Joint Logistician, an understanding of the KSAs needed to fulfill the duties of each role is essential. No lists of such KSAs have been formally defined. With more than 200 different federally funded courses that officers may attend, 21X CFETPs are too loose and happenstance, lacking guidance for the deliberate development of logistics officers. In light of ongoing fiscal constraints in the foreseeable future, prescribed and consolidated learning opportunities must be identified.

Research Objectives/Investigative Questions

Given the problem, there is a basic need to understand the KSAs that shall be taught to both career fields and more specifically to officers performing duties in a given mission set. To help define which KSAs must continue to be taught and are needed but not available in today's course curricula, this study investigates the KSAs required by USAF officers to perform in the 21X mission sets of deployment, distribution, supply management, lifecycle logistics, mission generation, repair network integration, and joint logistics. In addition, this research attempts to identify if and where KSAs overlap multiple mission sets in order to provide the Logistics Integrated Product Team with focused learning opportunities for future 21X courses. Finally, this study compares occupational descriptions and development of logisticians in sister services to those of USAF 21As to assess perceived KSA gaps in the joint logistics mission set. To address the objectives of this thesis, seven investigative questions (IQ) are posed:

- IQ 1. What bachelor's courses/master's degree programs are beneficial to 21X Officers?
- IQ 2. What are the AFSC-specific mission sets?
- IQ 3. What are the primary KSAs for each mission set?
- IQ 4. What KSAs overlap into multiple mission sets?
- IQ 5. What KSAs do we currently lack and/or not teach well/at all?
- IQ 6. What problems are coming in the foreseeable future; what KSAs are needed to respond to them?
- IQ 7. What KSAs do other services Logistics Officers acquire that USAF Logistics Officers do not?

Research Focus

This research was conducted as part of a joint project aimed at identifying the KSAs needed by 21X Air Force Logistics officers to perform their duties both now and in the future. The specific focus of this study is the 21A Aircraft Maintenance Officer and the

KSAs required to perform in the mission sets related to repair network integration, mission generation, lifecycle logistics and joint logistics. A complementary study by Capt Matthew Roberts (2013) investigated the essential KSAs for 21R Logistics Readiness Officers and the mission sets of deployment, distribution, and material management, lifecycle logistics and joint logistics. Combined, the two research efforts highlight the KSAs that are common to these two components of the logistics career field now and in the near future. Neither study includes an analysis of Munitions Maintenance Officers, nor do they attempt to identify management abilities traditionally covered in officer Professional Military Education (PME).

Methodology

Qualitative Content Analysis (Hsieh & Shannon, 2005) in three forms was used to conduct this study. Conventional Content Analysis was used to identify themes expressed during interviews in response to formulated office questions. Then, the research team used Directed Content Analysis with focus groups tasked to create mission-set specific lists of KSAs in light of an established list of KSAs used by Supply Chain Management (SCM) researchers in the civilian sector. Finally, a Summative Content Analysis of published occupation codes of Logistics Officer across the department of defense analyzes potential gaps in breadth expectation among officers in these career fields.

Assumptions/Limitations

This study lent itself to several underlying assumptions. First, the interviewees had enough relevant experience to provide useful responses and opinions to the questions posed based upon the ranks, time in service, and career background. The second assumes the

purposive sample of teams that participated in brainstorming exercises represents the whole population's sentiments and so can be generalized for all USAF logistics officers. Finally, the researchers assumed participants were unbiased while responding in interviews and team exercises alike.

Inherent limitations also exist. This study focused on the KSAs needed by the USAF Aircraft Maintenance Officer career field specifically. Therefore, all results of this study may not be directly transferable to other United States Air Force career fields, sister service logistics officers, or civilian academia and industry. In addition, time will make this study irrelevant as it was a cross-sectional snapshot of opinions as they existed in the summer of 2012. Finally, no measurement of how important particular KSAs are or when they are needed was completed.

Implications

Results of this study will be used to baseline A4LF's Deliberate Continuum of Learning (DCoL) initiatives. Research findings will also be shared with an Integrated Product Team (IPT) of both 21A and 21R developmental teams (comprised of Colonels who vector officers in each career field) who will in turn provide their recommendations as potential implementation plans to the Air Force Logistics Board (comprised of the General Officers in the 21X career fields). Using this information, the board can make more effective, fiscally-responsible choices regarding to human capital investment. These decisions will in turn be captured by future iterations of the 21X CFETPs and sister services may note findings as well.

In a broader context, the study has implications for practitioners in other AFSCs, other services and beyond the military. The understanding gained from assessing strengths across logistics disciplines is transcendental and may appeal to researchers interested in evolving human capital needs within logistics and SCM.

Summary

With aging assets, shrinking manpower pools and slashed budgets, the USAF 21A community needs better than good or available training and education; it needs a “Deliberate Continuum of Learning”. This study explores the major areas that need to be addressed as development is reassessed. Because Aircraft Maintainers have historically been deemed unfit for Joint Logistics leadership, an assessment of what they aim to create and what they lack is in order. The Literature Review in the next chapter paints the picture of what the joint Logistics Officer Corps is responsible for and considered findings from existing research on KSAs for such officers within the DoD and civilian logistics professionals throughout the world. Chapter 3 provides greater detail of methods employed to collect and analyze data. Then, Chapter 4 presents the data collected from field research and literature scans. Finally, an analysis of results is presented followed by recommendations for use by logistics management within the Air Force.

II. Literature Review

Overview

While no other studies have been conducted on the relationships between 21A and 21R officers within the USAF, there are many studies on the career fields independent of one another. Likewise, sister services have done their fair share of research on their own logistics professionals as have industry and academia. Before examining the findings of other research, it is prudent here to establish a definition for logistics officers across the services, hereafter referred to as the Logistics Officers Corps. This review will be limited to commissioned officers, as the Army, Navy and Marine Corps utilize Warrant Officers and Limited Duty Officers to flesh out various levels of expertise in their Logistics Officer Corps, yet the Air Force does not.

Logistics Officers Corps—who's in it?

United States Air Force

During the course of interviews, many argued for and against Aircraft Maintenance Officers being included in the broader “Logistics Officer Corps”. Those opposed to the idea state their claims on solid ground. In fact, the text for the capstone course for students of Logistics and SCM in the Air Force Institute of Technology (AFIT) and many civilian institutions backs their stance. In *Supply Chain Management*, Lambert (2008:3) models the manufacturing firm as a unit consisting six separate yet mutually dependant functional silos with which whose integrated processes the supply chain manager should be concerned; these being purchasing, **production**, **logistics**, research and development, marketing and sales, and finance (Figure 1).

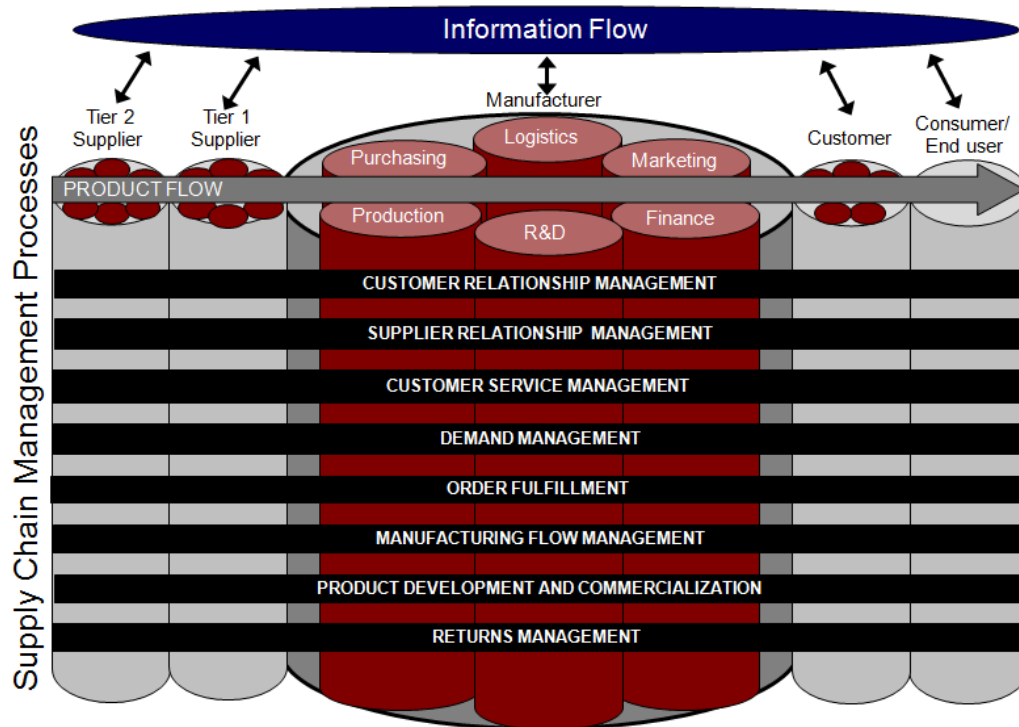


Figure 1: Notional Model of Supply Chain Management (Lambert, 2008:3)

When considering definitions (see *Background*) of the Aircraft Maintenance-specific mission sets definitions of Mission Generation and Repair Network Integration, one can argue these mission sets to be production functions for making mission capable aircraft or assets from broken ones.

On the other hand, the DoD itself has defined Logistics to include the maintenance of materiel:

logistics — Planning and executing the movement and support of forces. It includes those aspects of military operations that deal with: a. design and development, acquisition, storage, movement, distribution, ***maintenance***, evacuation, and disposition ***of materiel***; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (Joint Chiefs of Staff, 2010:186)

Additionally, the same *Department of Defense Dictionary* assigns aircraft and other weapons systems under its definition of materiel:

materiel — All items (including ships, tanks, self-propelled weapons, *aircraft*, etc., and related spares, repair parts, and support equipment, but excluding real property, installations, and utilities) necessary to equip, operate, maintain, and support military activities without distinction as to its application for administrative or combat purposes. (Joint Chiefs of Staff, 2010:193)

So, for the sake of this research, USAF Aircraft Maintenance (21A) Officers shall be considered logistics officers in accordance with the DoD definitions above and Air Force Officer Classification Directory (AFOCD) career field descriptions. For reference, the entire Logistics Officer Section of the AFOCD can be found at Appendix A, which begins with this overview:

The Logistics Career Area encompasses program formulation, policy planning, coordination, inspection, command and direction, and supervision and technical responsibilities pertaining to space and missile maintenance, ***aircraft maintenance*** and munitions, transportation, supply, and logistics plans and programs utilization fields. (Headquarters Air Force Personnel Command, 2012:85)

Here, the reader will find detailed Specialty Summaries, Duties and Responsibilities, and Specialty Qualifications and Specialty Shredouts for Logistics Commander (20C0), Aircraft Maintenance (21AX), Munitions Maintenance (21MX) and Logistics Readiness (21RX) Officers.

United States Army

In 2007, the United States Army (USA) created the Logistics Officers Corps as its newest functional corps. Reasons for the stand-up are discussed later in this chapter. Included in it are **Quartermaster**, **Ordinance**, and **Transportation** Regiments as well as the new multifunctional **Logistics** branch. Appropriate descriptions of each Military Occupational Specialty (MOS) are included in Appendix B from the Army's *Pamphlet 600-3*:

Commissioned Officer Professional Development and Career Management. Of note, the purpose of the Ordnance Branch is most similar to Aircraft Maintenance in the Air Force:

If the Army shoots it, drives it, loads it, communicates with it, or it explodes, then the Ordnance branch arms it, recovers it, repairs it, welds it, and renders it safe... Ordnance branch officers are logisticians performing the sustainment warfighting functions of maintenance and munitions management, and [Explosive Ordnance Disposal].(Department of the Army, 2010:325)

In 2006, one Ordnance Officer captured the reality of other Logistics Officers filling Maintenance roles, according to the *Army Logistician*:

[S]enior Ordnance Corps lieutenants assume the position of shop officer after 12 months of experience as maintenance platoon leaders. However, because of the manpower demands created by transformation and the Global War on Terrorism, lieutenants, some of whom are Quartermaster or Transportation officers, often are assigned as shop officers directly from the Basic Officer Leader Course. (McCoy, 2006)

Accordingly, the new Multifunctional “Logistics Officer Branch” has embodied this downward trend in manning and moved to a more generalist Logistics Officer Corps, beginning at the rank of Captain:

Logistics branch officers plan, integrate, and direct all types of sustainment activities in order to operate effectively on the modern battlefield enabling Army forces to initiate and sustain full spectrum operations. The nature of warfare in the 21st century operating environment mandates that Logistics branch officers maintain competence in all facets of logistics; therefore, the Logistics branch merges Ordnance, Quartermaster and Transportation basic branch officers into one unified branch at the rank of captain... They must be experts in integrating the various aspects of logistics into the commander’s plan, and in order to do so, must be heavily experienced in multifunctional logistics and have a basic competence in the skills, knowledge and attributes of supply, maintenance and transportation operations. (Department of the Army, 2010:307)

United States Navy

In the active duty Navy, there are three commissioned officer communities under which more specific designators are established. First, two designations within the Unrestricted Line Officers are charged with both overseeing maintenance of their given weapons system in addition to leading combat operations while underway (Navy Personnel Command, 2013c). These are Surface Warfare Officers (111X designator) and Nuclear Submarine Officers (112X designator). While these combatant maintainers depend on logistical support to fight, they are not considered a part of the Logistics Officer Corps by the navy. Coincidentally, neither is the 21A equivalent.

That equivalent comes from the Restricted Line Officer community, the Aerospace Maintenance Duty Officer (AMDO). Restricted Line Officers may not command combatants, yet have command equivalents within their own units (Navy Personnel Command, 2013b) The below excerpt from the *AMDO Mission Homepage* shows an intentional grooming of an AMDO for not just the greater defense Logistics Officer Corps, but also Acquisition. For a complete career progression explanation, see Appendix C.

Aerospace Maintenance Duty Officers (1520 designator) develop, establish, and implement maintenance and material management policies and procedures to support naval aircraft, airborne weapons, attendant systems, and related support equipment fleet-wide... In addition to working in fleet maintenance organizations, AMDOs as they mature through their careers get involved in all aspects of system acquisitions and support as Program Managers and Logistics experts. (Navy Personnel Command, 2013a)

Finally, the Staff Corps rounds out the third community of active duty commissioned officers, who like Restricted Line Officers, serve in a combat support role. The Logistics Officers Corps here is represented by the Supply Corps Officer (310X designator).

Supply Corps Officers are trained and employed in three principal lines of operation; Supply Chain Management, Acquisition Management and Operational Logistics. Complementing these lines of operations are skills in Comptrollership, Operations Research, and Business Management. The broad responsibilities of the Supply Corps are closely related to those of many executive positions in private industry and embrace functional areas such as financial management, inventory management, fuels management, physical distribution, and procurement. (Naval Supply Systems Command, 2013)

United States Marine Corps

Once commissioned, every Marine officer attends The Basic School (TBS) at Quantico, Virginia. TBS emphasizes the skills needed to command an infantry platoon in the context of a Marine Corps Air Ground Task Force (MAGTF) (United States Marine Corps, 2013). Regardless of subsequently assigned individual military occupational specialty, all Marine officers share this baseline MAGTF mind set and experience. Upon successful completion of TBS and based on the personnel needs of the Marine Corps, officers are selected for their specific individual Military Occupational Series (MOS) including Logistics. Those officers considered a part of the Logistics Officer Corps obtain a Primary MOS of Logistics Officer (0402), Combat Engineer Officer (1302), Ground Supply Officer (3002), Aircraft Maintenance Officer (6002) or Aviation Logistics Supply Officer (6602). All of these aspire to rise to the rank of Logistics Colonel (8041) which has its own MOS. The applicable MOS summaries from *Marine Corps Order 1200.17D: Military Occupational Specialties Manual* are shown below; their complete descriptions can be found in Appendix D. First, the logistics officers (as there are non-loggies in this element too) within the MAGTF's *Logistics Combat Element* (LCE) include:

MOS 0402: **Logistics Officers** plan, coordinate, execute and/or supervise the execution of all logistics: supply, maintenance, transportation, general engineering, health services, and services. Logistics officers serve as commanders or assistants to the commanders of tactical logistics units/elements and as members of general or executive staffs. They perform duties of mobility officer, maintenance management

officer, motor transport officer, landing support officers, and are responsible for administrative and tactical unit movement of personnel, supplies, and equipment by all modes of transportation. (Department of the Navy, 2012:1:20)

MOS 1302: **Combat Engineer Officers** command or assist in commanding engineer units consisting of Marines in various MOSs whose duties include: repair, maintenance and operation of heavy equipment; engineer reconnaissance; obstacle system emplacement; breaching operations, to include reducing explosive hazards; mine/countermine operations; employment of demolitions and explosives; urban breaching; route clearance operations; assault, tactical and non-standard bridging; design, construction of expedient roads, airfields and landing zones; design, construction and maintenance of combat roads and trails; design and construction of expedient roads, airfields and landing zones; design and construction of survivability positions; expedient horizontal and vertical construction; and design, construction and maintenance of base camps/forward operating bases and combat outposts; storage and dispensing of bulk fuel products; and the installation, operation and maintenance of tactical utility systems. (Department of the Navy, 2012:1:40)

MOS 3002: **Ground Supply Officers** supervise and coordinate supply operations and related functions of a supply activity, unit, base, or station, including operating forces and shore station organizations. Ground supply officers may direct the activities of a maintenance distribution or industrial type organization, and they command or serve in either an operating forces service unit or a non-operating forces activity. Ground supply officers supervise the execution of policies and procedures pertaining to procurement, receipt, accounting, repair, storage, distribution, issue, disposal, computation, and maintenance of stock levels. They supervise transportation of public funds; participate in the budget process and administration and expenditure of allotted funds; and make necessary recommendations to the commanding officer. (Department of the Navy, 2012: 1:125)

By contrast, the Logistics Officer Corps represented by the MAGTF's *Air Combat*

Element (ACE) includes MOSs listed here:

MOS 6002: **Aircraft Maintenance Officers** (AMOs) supervise and coordinate aircraft maintenance and repair activities. To be effective, 6002 AMOs must possess a detailed, working knowledge of all Navy-sponsored aviation maintenance programs and processes governed by CNAFINST 4790.2 series. MOS 6002 AMOs are different from MOS 6004, Aircraft Maintenance Engineer Officers in that they are unrestricted officers whose career paths can lead to the command of Marine Aviation Logistics Squadron (MALS) or to designation as an Acquisition Professional. (Department of the Navy, 2012:1:159)

MOS 6602: **Aviation Supply Officers** are unrestricted officers who may command, or assist in commanding a Marine Aviation Logistics Squadron. Aviation supply officers may also achieve designation as an Aviation Professional. Aviation supply officers are responsible for planning, directing, and controlling the performance and execution of aviation supply functions within Marine Aircraft Wings, Marine Aviation Logistics Squadrons, Marine Corps Air Stations, CVs and LHAs, and various TYCOM and SYSCOM staffs. This requires in-depth familiarity and working knowledge sufficient to supervise and control Navy-developed and sponsored aviation logistics information management programs; budgeting and accounting functions; aviation inventory management functions; and warehousing operations. Aviation Supply Officers must ensure that aviation supply operations sustain the unit's combat readiness and enhance its ability to perform its mission. They must be able to establish division and department goals and develop and execute plans to achieve those goals. They must monitor supply management indicators to assist in tracking performance over time and ensure progress towards accomplishment of established goals. Aviation supply officers must initiate and maintain liaison with external agencies to provide or obtain support and to report supply management indicators. They must also initiate and maintain liaison with maintenance personnel in the operational squadrons and the Intermediate Maintenance Department so that they have a clear appreciation of the needs of their customers. (Department of the Navy, 2012:1:164)

Studies Regarding Logistics Officer Corps Development

As mentioned, past research within the Air Force has done little to identify commonalities across the 21A and 21R career fields KSAs. However, one will find many studies on KSAs required for logisticians in the Air Force and across the rest of the DoD.

Department of Defense

In 2009, the National Defense University established the Center for Joint and Strategic Logistics to “become the foremost organization for the study of logistics in support of national security” (National Defense University, 2009). Their established means of doing this is “host[ing] and manag[ing] seminars, conferences and other meetings to develop Joint Logistics Education capabilities” (National Defense University, 2009). One such conference was held in June of 2012, to “help foster a stronger logistics faculty community across the

[Joint PME] landscape by bringing logistics faculty together to learn from each other” (Center for Joint and Strategic Logistics, 2012:1). Their first topic of discussion simply asked “What should every logistician know and when” (Center for Joint and Strategic Logistics, 2012:1)? Due to the nature of the session, no answers to this question were captured by the report, though representatives from each service have much research to draw upon based on service-specific studies performed in the past.

United States Air Force

While a comprehensive Logistics Officer Corps analysis is provided later for sister services, next is a review of relevant studies focused on USAF Aircraft Maintenance Officers. For a review of USAF Logistics Readiness Officer studies, please reference the work done by my research contemporary, Capt Matthew D. Roberts (Roberts, 2013).

Prior to World War II, the enlisted force held the highest ranks of aircraft maintenance. Literally overnight, former line chiefs and production chiefs gained their commission and became the first officers (Lynch & others, 2005:150). A thorough history of doctrine, organization, and regulation changes in the maintenance realm are outlined well by RAND’s *Air Force Chief of Staff Logistics Review* (CLR). For the sake of relevance, this look-back at research begins with the turn of the 21st century to the present.

This CLR (Lynch & others, 2005) was commissioned in 1999 by then Chief of Staff General Michael Ryan to assess problems he suspected were occurring due to the conflict of filling the daily flying schedule vice maintaining long term fleet health (Lynch & others, 2005). His suspicions were that Maintenance under Operations leadership (instituted in the early 1990s by then Chief of Staff General Merrill McPeak) was a driving force for this

genesis of “tired iron”, but was himself opposed to yet another major reorganizing of the wing. His successor, General John Jumper, favored organizational change and executed the reorganization to the current Combat Wing Organization (CWO) still in use today. In the CWO, both on- and off-equipment maintenance personnel (munitions included) on base report to the new Maintenance Group Commander, the most senior maintainer on base. This same reorganization also sent the newly formed Logistics Readiness Squadron out from under the leadership of the disbanded Logistics Group and into the Mission Support Group.

While realignments were not the intent of the CLR, its findings certainly supported it. One of the four areas for maintenance process improvements recommended including officer development. One major initiative was to “Develop Weapons School-type training for logistics officers” (Lynch & others, 2005:xx). This eventually lead to creation of the Advanced Maintenance/Munitions Officer School (AMMOS) (Fike, 2010). Although they did not evaluate this over the short term due its slow moving nature, RAND’s research did capture a significant finding when they asked a purposive sample of operators and maintainers “How will the realignment of functions under the LG impact maintenance officer development?” (Lynch & others, 2005:44). The results of this interview question (Table 1) show strong opinions favoring improved training when all maintainers were aligned within the same group.

Table 1: Impact of Realignments on Officer Development (Lynch & others, 2005:45)

	Maintainers						Operators (13)	
	Total (152)		In OG (46)		In LG (106)			
	Enlisted (106)	Officer (46)	Enlisted (33)	Officer (13)	Enlisted (73)	Officer (33)	Enlisted (0)	Officer (13)
ALL—MAF/CAF (165)								
Better	56%	63%	36%	46%	64%	70%	0%	46%
Unchanged	26%	30%	36%	54%	22%	21%	0%	23%
Worse	7%	7%	15%	0%	3%	9%	0%	23%
Don't Know/No Opinion	11%	0%	12%	0%	11%	0%	0%	8%

To support the newly established Maintenance Groups, General Jumper, figuratively speaking, said that Operators had not flunked, but the Air Force would improve if it had an officer with a “PhD in Maintenance” in charge of maintenance operations (Webb, 2002:3). In 2002, Colonel Charles L. Webb III took the statement literally in his research titled *Why a PhD in Maintenance?* (Webb, 2002). In this Air War College report, Webb argued for the chief’s vision of the maintenance world, and felt it could not be attained through the generalized logistics training and education offered by AFIT and other schoolhouses; it required much deeper dive into distinctly maintenance processes. Webb then went on to describe the applications of such a higher education in the roles of Maintenance Group Command, Air Logistics Centers, Product Centers, and staffs from Major to Joint Commands.

Reflecting several of the KSAs trended in this study, Major Jeffrey King wrote his thorough Air Command and Staff College (ACSC) monograph in 2006, *How to Build a Better Aircraft Maintenance Officer* (King, 2006). In addition to drawing a picture of the operating environment, King completed a review of training and education of 21As which remains unchanged today. He argued the principal competencies of a 21A are Technical Expertise, Maintenance Management and Change Management, and provided recommendations for strengthening each. He also foreshadowed the transfer of flightline maintenance back under Operations leadership and effectively disbanding Aircraft Maintenance Squadrons. This planned reorganization for 2008 had also intended to disband the Maintenance Group in favor of a new Materiel Group, which would have been composed of off-equipment maintenance (specifically Maintenance Squadrons) and the Logistics Readiness Squadrons (home of the 21R). This did not happen, due to a halt ordered by new Chief of Staff

General Norton Schwartz, after his predecessor and champion for the reorganization, Gen Michael Moseley, resigned in the aftermath of two nuclear incidents.

The most recent study identified on 21A training is an assessment of AMMOS in 2010 by Lieutenant Colonel Scott T. Fike (Fike, 2010). As stated, the desired “[AMMOS] outcome is a graduated officer who is better enabled to 1) produce 2) instruct and 3) advise upon return to their wing and/or in the forward deployed environment” (Fike, 2010:6). After 7 years worth of graduates from this school at Nellis Air Force Base, Nevada had been fielded, Fike set out to determine if this graduate-level training was making a Return on Investment for the time students spent away from the unit and the unit funds expended on their behalf. His survey included Maintenance Group Commanders, Deputy Group Commanders, and graduates. Among his possible recommendations for the future of AMMOS was one to merge this school with its 21R counterpart, Advanced Logistics Readiness Officers Course (ALROC). Fike explains, “there is significant redundancy in the AMMOS and ALROC curricula. Approximately 50% of the course material is identical or nearly so. There are economies of scale and professional functional synergies to be gained by merging the two schools” (Fike, 2010:20).

Finally, there are recurring studies of each AFSC by Air Education and Training Command. The results of which are recorded as *Occupational Analysis Reports* (OAR). Conducted via survey sent to all active 21A and 21M officers every 3 years, the “OAR data includes information on what career field incumbents are actually doing in their jobs throughout each stage of their career along with supporting information regarding when and how members should be trained to perform their jobs” (Air Education and Training Command, 2012). It is later presented to “career field leadership so they can make

decisions based on objective, empirical data when updating training curriculum” (Air Education and Training Command, 2012). While most of the findings are addressed in one formal training course offered by the Maintenance Community, there is a residual list of Knowledge Requirements that, although given high knowledge emphasis ratings by the officers surveyed, do not secure a place on any of the curricula managed. Appendix E details a list of selected Unmatched Knowledge Requirements with high ratings of knowledge emphasis. The list contains KSAs that likely overlap 21A and 21R missions.

United States Army

In 2005, prior to the stand-up of the Army’s Logistics Officer branch, Lieutenant Colonel Mark Solseth, an Army Quartermaster, wrote *Distribution and Supply Chain Management: Educating the Army Officer* (Solseth, 2005). In it, he “recommend[ed] the level to which officers should be educated, and provid[ed] suggestions for educating and tracking officers with distribution management expertise” (Solseth, 2005;iii). Solseth (2005) analyzed the means to attaining those skills through the lenses of Army Officer development pillars and the levels using Benjamin Bloom’s *Taxonomy of Educational Objectives* (Bloom, 1956). After reviewing military and civilian education opportunities as well as work experiences available to the Army Logistics Officer, he proposed and described three areas of competency: technological competence; analytical competence; and a broad understanding of the supply chain.

The study that backed Major General Mitchell H. Stevenson’s announcement in December of 2007 to stand up a new Army Logistics Branch (Lopez, 2007) was produced by RAND, entitled *Opportunities for Improving the Education and Career Development of Army Supply*

Chain Managers (Held & others, 2007). After motivating the study with review of prior research pointing out Supply Chain problems in Combat Operations, the research team identified “key SCM positions, reveals possible knowledge and skill gaps of Army supply chain managers, and suggests some likely sources of such gaps” (Held & others, 2007:ix). Appropriately, RAND then offered “potential avenues for improving SCM education, training, and career development in the Army” (Held & others, 2007:ix). Two findings were particularly applicable to this research effort: First, a survey of the 660 Officers (Major through General Officer) in SCM positions asked respondents to identify knowledge areas they felt lack of preparedness to perform their current duties (Figure 2).

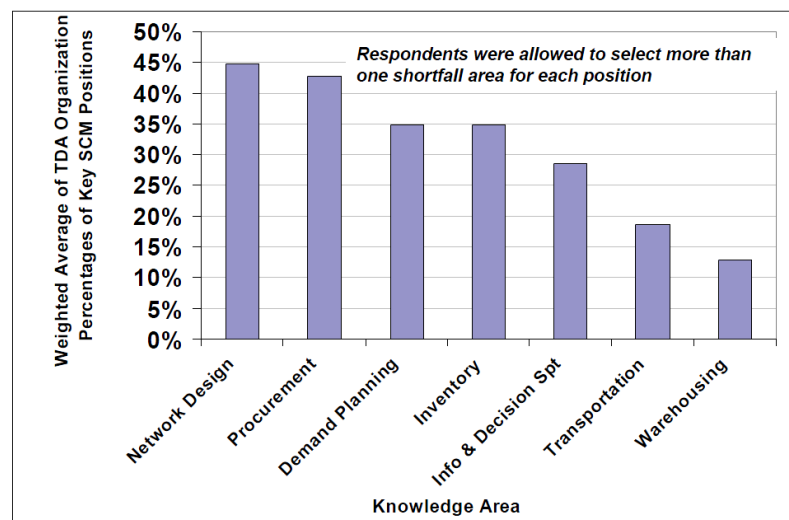


Figure 2: Army SCM SMEs’ Suggested Shortfalls (Held & others, 2007:35)

Second, a review of education in 24 logistics General Officers biographies showed 17 had “highly relevant” graduate degrees. These were: six MBAs; six Masters from Florida Institute of Technology (a cooperative degree program that recognizes some Army courses for credit) to include procurement, logistics management, transportation management

specialties; and five others with Masters of Business Management, Operations Research, Systems Management and Logistics Management.

Four years after the standup of the Logistics Branch, Colonel Samuel Russell completed his study, *The Evolution and Implementation of the Logistics Officer Corps* (Russell, 2012). After reviewing evolutions in Army Sustainment from 1900 to 2012, he tracked the progress of transitioning all formerly Quartermaster, Ordnance, and Transportation branched officers and billets into the multifunctional branch. Russell highlighted “an unintended consequence of the implementation of the [Logistics] branch was a loss of functional identity of positions” (Russell, 2012:15). In other words, a job needing someone with strong Quartermaster history was now coded generically “Logistics”, and may be filled with a career Transportation or Ordnance officer who was out of their element. Even after the Logistics Branch genesis, he reports senior leaders felt strongly that “every [Logistics Branch] officer is required to have a functional area of expertise” (Russell, 2012:17), yet the Army struggled with ways to properly codify positions and adapt to the paradigm shift. Officer requisitions needed improvements to bring the right officer to the right job. In addition, Russell (2012) interviewed recent battalion and brigade commanders and concluded Lieutenants are and would continue to be employed outside of their primary MOS in a multifunctional sense, giving a false sense of experience to the officer’s record. To overcome this, Russell (2012) recommended making Ordnance, Quartermaster and Transportation officer technical schools more multifunctional to better prepare Lieutenants for reality.

United States Navy

The Department of the Navy published a recent study of its core logistics career field in 2010, named *The Supply Corps Vision 2040, Strategic Vision Study* (Department of the Navy, 2010). In creating this career continuum of learning for today's junior officers who will lead the Supply Corps in 30 years, their goal was "to ensure [the Supply Corps builds] the acquisition, business and logistics capabilities required to support the Navy and Joint warfighters in the future" (Naval Supply Systems Command, 2010). The study "identifies the core competencies and enduring traits that drive [a] competitive advantage and value proposition" and "highlights new skills that [they] should develop to succeed across a wide variety of new missions and possible futures" (Naval Supply Systems Command, 2010).

Today's many Supply Corps leaders that contributed to the study explain:

Supply Corps officers serve with multi-agency and multi-national partners as business professionals leading and working in ***supply chain, acquisition/contracting*** and ***operational logistics*** environments. These skill sets will remain relevant in a dynamic environment characterized by distributed operations and expanded mission sets in humanitarian assistance, disaster relief, and asymmetric warfare. As capability versus threat-based deployment models increase in importance, so does the requirement for increased joint, interagency, intergovernmental, and multi-national (JIIM) collaboration. (Department of the Navy, 2010:7)

In addition to the principle skill sets highlighted above, the study also suggests the main complementary skills and experience include: Business Management, Financial Management, and Operations Analysis/Research.

United States Marine Corps

While attending the Marine Corps University in 2009, Captain DanTe' Jones focused his efforts on comparisons between the Logistics officers of the ACE in his research titled *From Aviation Supply and Maintenance Officers to Aviation Logisticians* (Jones, 2009). He argues that despite current separation of career paths and responsibilities from Lieutenant to Major, Aviation Supply Officer and Aviation Maintenance Officer MOSs should be combined; command billets for Marine Aviation Logistics Squadrons are filled by either MOS. Jones (2009) targets the separate duties, initial technical training and governing orders for these officers' early careers as prime areas for efficiencies to be realized. Jones backs this hypothesis with examples of naval standards being re-written, process improvement events occurring and billets being filled that all "require an understanding of aviation supply and aviation maintenance as a whole, not separately" (Jones, 2009:6) Due to these requirements, he explains most officers of both MOSs "already understand that more than a basic knowledge of these two complementing technical areas is required to provide aviation support to the war fighter" (Jones, 2009:9).

In his *Analysis of Promotion Rates to Lieutenant Colonel and Selection for Command for USMC Aviation Supply and Maintenance Officers*, Michael Gonzalez provides an excellent background on organizational structures and billets in which these officers operate as well as the career progression and schooling of these Aviation Logisticians (Gonzalez, 2011). Gonzalez also establishes in detail what Jones suggested in his study; "Each type of officer follows distinct career paths, but both vie for the same key department head billets as majors, for promotion to lieutenant colonel, and eventually compete against one another for command of a [Marine

Aviation Logistics Squadron] or [Center for Naval Aviation Technical Training Marine Unit]” (Gonzalez, 2011:27).

Putting the “L” in MAGTF: Enabling the Success of MAGTF Logisticians for Today’s Fight and Future Conflict was penned by a contemporary to Capt Jones at Marine Corps Command and Staff College, Major Kirk Spangenberg (Spangenberg, 2009). However, his focus was on the other side of the USMC Logistics Officer Corps who are within the Logistics Combat Element. Spangenberg argues that in order for logistics officer “training and education continuum as a whole continues to suffer from institutional neglect” (Spangenberg, 2009:2). He points out the lack of integration between the very separate training and education organizations within the USMC. Though there is now Logistics (LOG) Training and Education Center of Excellence (TECOE) in Camp Johnson, NC, Spangenberg (2009) compares the staffing and the authority of this small organization to other TECOE’s and reveals their lack of authority due to ranks of the personnel assigned and organizational placement within Marine Corps hierarchy. In addition, he analyses the weakness of LCE exercises in comparison to other element’s conflict exercises and provides recommendations for increasing their effectiveness. He also recommends means for the current Logistics Education and Training agencies to realign as a command-level office to drive a message to officers that the Corps is serious about their development as professional logisticians. Then, Spangenberg (2009) recommends authorities entrusted to this new office include ownership of logistics doctrine and training standards.

Studies Regarding Supply Chain Managers in Industry

Military logistics and commercial logistics are parts of the same industry. Both are concerned with focused logistics, precision and velocity, coordinated delivery schedules, fast and flexible distribution, and good

infrastructure and equipment at distribution centers ... The military supply chain management system should look at the experience and expertise of the private sector.

-Dr. Kristine Lee Liephart (2001:1)

As Dr. Liephart suggests, looking outside the fence of military installations is certainly a worthy effort as the DoD builds a better Logistics Officer Corps (Leiphart, 2001). Studies of academic curricula and research from the civilian world provide great context for making a serious self assessment of the military officer's development.

Majors Todd Coleman and Jerry Stonecipher would have certainly agreed with this sentiment. Their combined research project presented *A Comparison Of The Air Force Institute of Technology and Civilian Institutions Graduate Logistics Curricula* (Coleman & Stonecipher, 2006). This team reviewed existing research to identify eight competencies that best suit mid-level logistics leaders. Once this scorecard was established, Coleman and Stonecipher compared competency coverage of curricula of AFIT to those of nine other institutions (seven of which were rated in the top 10 SCM/Logistics Programs of 2005). Their proposed competencies were: Networking/Computing; Globalization; Finance/Cost Control; Logistic Center Operations; Planning/Evaluation; SCM; Quantitative Analysis; Business Skills.

Professor Yen-Chun Jim Wu published *Contemporary Logistics Education: An International Perspective* (Wu, 2007). In said study, he analyzed logistics education in European, North American and Asian countries. He further segments assessments between developing and developed nations as well as continental and island nations. Wu's descriptive analyses of 224 academic institutions yielded two tables of particular interest to this study (Table 2 and 3).

Table 2 : Worldwide logistics courses offered at undergraduate level (Wu, 2007:516)

	Rank	Frequency
<i>Mandatory course</i>		
Logistics management	1	62
Transportation management	2	33
Supply chain management	3	30
Economics	4	25
Statistics	5	24
Computer application	6	23
Accounting/finance	7	21
Seminar	8	20
Purchasing management	9	16
Management theory and practice	10	14
<i>Elective course</i>		
Logistics management	1	24
Seminar	2	16
Supply chain management	3	14
Internet application	4	11
Economics	4	11
Transportation management	6	9
Marketing management	6	9
Internship	8	8
Accounting/finance	9	6
Statistics	9	6

Table 3: Worldwide logistics courses offered at graduate level (Wu, 2007:516)

	Rank	Frequency
<i>Mandatory course</i>		
Logistics management	1	34
Supply chain management	2	28
Seminar	3	19
Operations management	4	12
Purchasing management	5	10
International logistic	6	8
Transportation management	6	8
Materials management	7	7
Distribution system management	8	6
Business logistics	8	6
Simulation	10	5
<i>Elective course</i>		
Seminar	1	21
Logistics management	2	14
E-commerce	3	10
Decision support and expert system	4	8
Operations management	4	8
Supply chain management	6	7
Transportation management	7	6
Production development	7	6
Financial management	8	5
Management information system	8	5
Business negotiation	8	5

An interesting comparison between logisticians in government and in industry was conducted by the United States' neighbors to the North. In 2009, Professor Paul Larson surveyed Canadian Purchasers regarding their management views in *Public vs. Private Sector Perspectives on Supply Chain Management* (Larson, 2009). His findings suggest public procurement professionals have a narrower view of SCM and difference in topics, tools and techniques required for job success (Table 4).

Table 4: Top Ten Lists of Topics, Tools and Techniques (Larson, 2009:236)

"Please rate each of the following topics, tools and techniques, in terms of their importance for you in your current professional position." (0 = no importance; 1 = very low importance; 2 = low importance; 3 = medium importance; 4 = high importance; 5 = very high importance)			
Public Sector	Mean	Private Sector	Mean
1. Public procurement	4.60	1. Communication skills	4.46
2. Communication skills	4.55	2. Negotiation	4.29
3. Request for quotation	4.51	3. Price and cost analysis	4.14
4. Contract management	4.35	4. Teamwork	4.09
5. Legal issues	4.29	5. Computer skills	4.07
6. Ethical issues	4.15	6. Inventory management	4.04
7. Leadership	4.15	7. Leadership	4.03
8. Computer skills	4.14	8. Supplier selection	4.01
9. Teamwork	4.06	9. Purchasing & supply	3.99
10. Purchasing & supply	4.05	10. SCM	3.90

Finally, the Supply Chain Management Review conducted a survey of *What Hiring Managers are Looking For Today* which they published in 2012 (McCrea, 2012). This comprehensive survey received response from three-quarters of their readers asking the questions regarding their view of prospective new employees. Their major results are shown in Figures 3, 4 and 5.

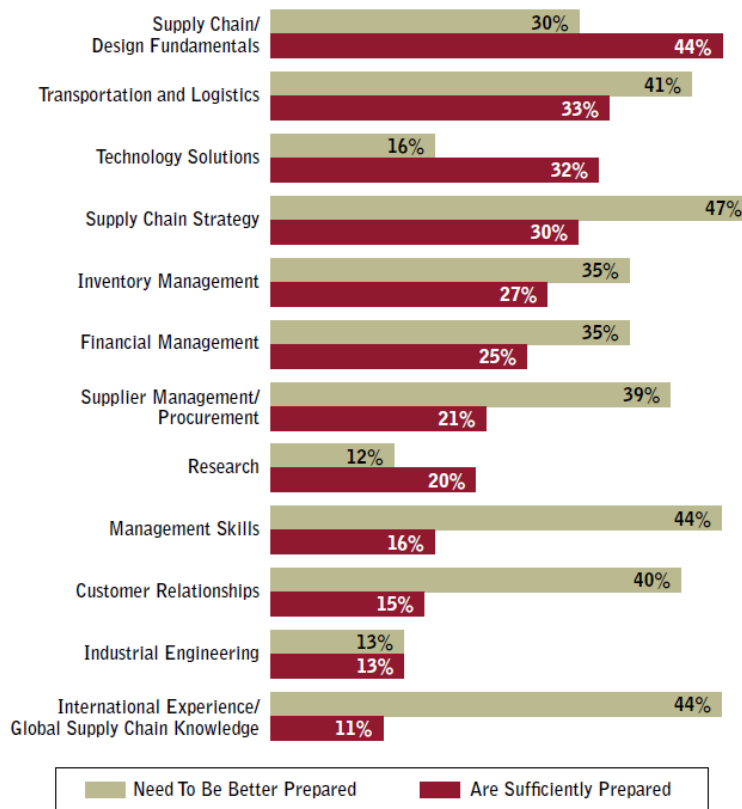


Figure 3: How Well Prepared Are Job Candidates? (McCrea, 2012:S3)

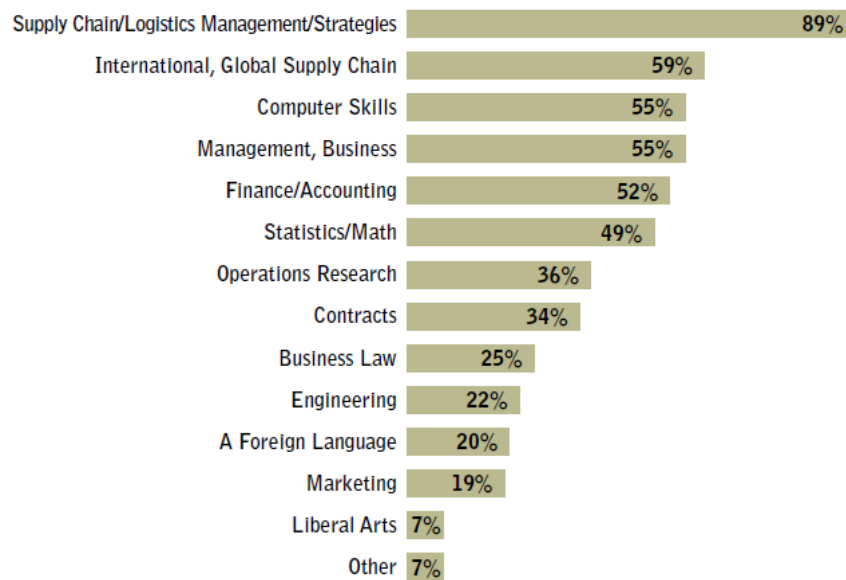


Figure 4: Courses Most Useful to Enter Supply Chain Field (McCrea, 2012:S4)

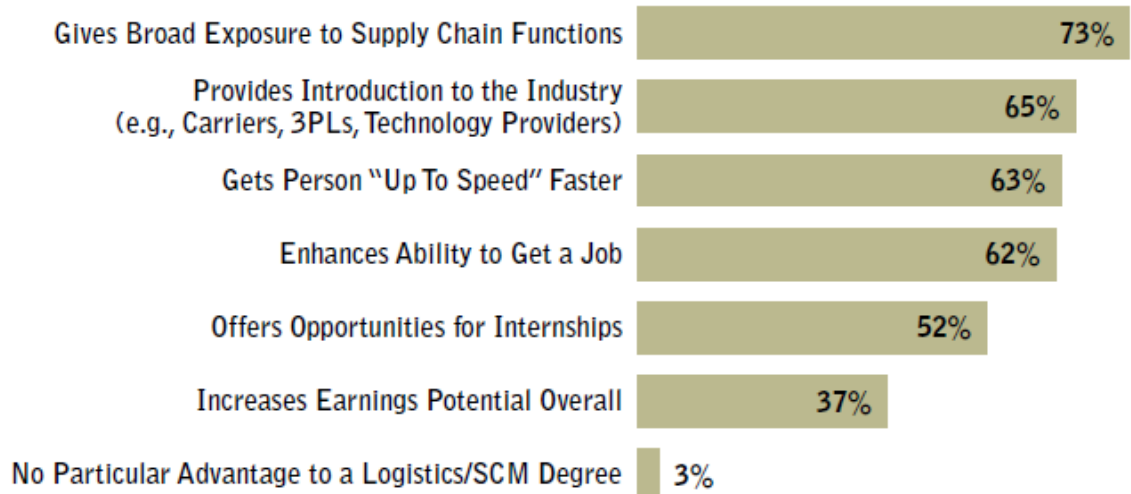


Figure 5: Perceived Value of a Logistics/Supply Chain Degree (McCrea, 2012:S6)

Summary

The thorough explanations of officer descriptions in this chapter from across the DoD will be analyzed in Chapter 4's results for IQ 7 to determine similarities and differences in responsibility. Additionally, the findings of referenced research efforts within the DoD and Industry alike will provide sounding boards for conclusions about this study's data in Chapter 5. But first, Chapter 3 brings to light how said data was acquired in pursuit of answers.

III. Methodology

Overview

This chapter discusses qualitative content analysis, then details the interviews, focus groups and literature review analyses used to support the proposed investigative questions. Additionally, this chapter covers the selection method used to achieve a representative sample of Air Force Logistics officers, the demographics achieved, as well as the questions and tools used with the participants. Finally, it conveys the practices used to code and categorize answers from the field research as well as how existing literature was assessed in order to make comparisons between findings.

Qualitative Content Analysis

In their work to better define the approaches of content analysis, Hsieh and Shannon (2005) summarize steps required by all forms:

All approaches to qualitative content analysis require a similar analytical process of seven classic steps, including formulating the research questions to be answered, selecting the sample to be analyzed, defining the categories to be applied, outlining the coding process and the coder training, implementing the coding process, determining trustworthiness, and analyzing the results of the coding process. (Hsieh & Shannon, 2005:1285)

They define the three approaches as Conventional, Directive and Summative content analysis, then provide examples of each from existing research. Coding is the heartbeat of this method. “The success of a content analysis depends greatly on the coding process. The basic coding process in content analysis is to organize large quantities of text into much fewer content categories” (Hsieh & Shannon, 2005:1285).

In fact, differences between stated approaches are namely in coding. Conventional Content Analysis derives code categories during analysis phase based on the information

provided; their research team notes this is especially typical of open question interviews (Hsieh & Shannon, 2005:1279). Directive Content Analysis takes codes already in use, but “[a]s analysis proceeds, additional codes are developed and the initial coding scheme is revised and refined” (Hsieh & Shannon, 2005:1286). Finally, Summative Content Analysis looks at textual references and attempts to consolidate like terms and track their frequency. However, the “summative approach to qualitative content analysis goes beyond mere word counts to include latent content analysis. Latent content analysis refers to the process of interpretation of content. In this analysis, the focus is on discovering underlying meanings of the words or the content” (Hsieh & Shannon, 2005:1283-1284).

Representative Sampling

The hope was to provide the best possible representation of the 21X community’s opinions within time and funding constraints attached to the study. To do this, the field research itinerary was developed to visit key logistics-heavy bases. At these bases, various logistics units were serving in multiple mission sets. Table 5 displays the locations and the representative mission sets at work within targeted units; Table 6 lists all units who participated with interviews and/or focus groups. Of note, the research team traveled to no overseas, nuclear-tasked, special operations or remotely piloted aircraft bases. However, due to high turnover rates of officers at each base, it was assumed participants at select bases would include some personnel with experience in these niche fields. Additionally, all Major Commands were represented at Sheppard AFB, TX, as described below; descriptions of units involved in both interviews and focus groups are also listed here.

Table 5: Field Research Locations and Mission Set Representation

Location	Deployment	Distribution	Supply Mgt	Repair Network	Mission Gen	Life Cycle Logistics	Joint Log
Sheppard AFB, TX				X	X	X	
Joint Base Charleston, SC	X	X		X	X		X
Tinker AFB, OK			X	X		X	X
Joint Base Langley-Eustis, VA	X		X	X	X		X
Scott AFB, IL		X	X				X
Joint Base McGuire-Dix-Lakehurst, NJ	X	X		X	X		X
DC Area: Pentagon and Ft. Belvoir							X
Wright-Patterson AFB, OH				X		X	

In June of 2012, AF/A4LF hosted the 21A/M Utilization and Training Workshop at Sheppard AFB, TX (Sheppard). This forum included at least one A4 staff Colonels and supporting subject matter experts from each of the Major Commands [Air Combat Command (ACC), Air Education and Training Command (AETC), Air Force Global Strike Command (AFGSC), Air Force Materiel Command (AFMC), Air Force Reserve Command (AFRC), Air National Guard (ANG), Air Force Special Operations Command (AFSOC), Air Mobility Command (AMC), Pacific Air Forces (PACAF), and United States Air Forces in Europe(USAFE)]. Given the nature of this event, attendees were anticipated to be experts in Repair Network Integration, Mission Generation and Lifecycle Logistics. A4LF provided a 1-hour block for this study to collect data from these groups, as explained in the Focus

Groups section of this chapter. Note: no personal interviews were conducted at this venue, though several of the participants were interviewed at their home bases during later travels.

Joint Base Charleston, SC (JBC) was visited in July of 2012. At this base, the research team encountered a Maintenance Group (MXG) with an Aerial Port Squadron (APS), Maintenance Operations Squadron (MOS), Maintenance Squadron (MXS), Aircraft Maintenance Squadron (AMXS); the researchers also interfaced with the Logistics Readiness Squadron (LRS). Interviews and focus groups were both conducted here.

Next, Tinker AFB, OK (Tinker) was included in this study in July of 2012. Here, the research team collected data from leaders of Air Force Sustainment Center (AFSC), Air Logistics Complex (ALC), Maintenance Wing (MXW), Propulsion Maintenance Group (PMXG), Aircraft Maintenance Group (AMXG), Supply Chain Management Wing (SCMW), Supply Chain Management Group (SCMG), the operational Maintenance Group (MXG), Logistics Career Broadening Program (LCBP), Defense Logistics Agency (DLA); the MXG, to include AMXS, MOS and Maintenance Squadron (MXS) and finally the LRS.

In August, the first trip was to Joint Base Langley-Eustis, VA (JBLE). Here, researchers received input from many members of the ACC/A4 staff, the Supply Chain Operations Group (SCOG) and squadrons (SCOS), the MXG and LRS. An Air Force Officer serving on staff with the Army Logistics University's Joint Logistics Course (ALU/JLC) was also interviewed from the nearby Fort Lee, VA.

In the same month, logistics leaders of Scott AFB, IL (Scott) welcomed the research team. Included in this study were members of TRANSCOM J5/4 directorate, AMC A4 directorate, AMC IG, the Supply Chain Operations Wing (SCOW), SCOG and SCOS.

Then, the research team traveled to Joint Base McGuire-Dix-Lakehurst (JBMDL), NJ. The study was supported by the MXG, AMXS, 2 each MXS, LRS, APS, the Contingency Response Wing (CRW), The Mobility Operation School and its ALROC and Advanced Study in Air Mobility (ASAM) programs.

Rounding out August, the researchers traveled to the Washington, DC (DC area), where they were able to collect information from Logistics Officers within J4, AF/A4/7 and the DLA Headquarters.

The last interviews and focus groups were conducted at Wright-Patterson Air Force Base, in September of 2012. Here, the research team gleaned information from AFMC/A4 leaders, specifically seeking the unique Repair Network Integration Division.

Table 6: Participating Units by Location

Dates	Location:	Participating Units
12 Jun 12	Sheppard	ACC, AETC, AFGSC, AFMC, AFRC-ANG, AFSOC, AMC, PACAF, USAFE
12-13 Jul 12	JBC	MXG, AMXS, APS, MOS, MXS; LRS
19-20 Jul 12	Tinker	AFSC, ALC, MXW, PMXG, AMXG, SCMW, SCMG; DLA; MXG, AMXS, MOS, MXS; LRS; LCBP
2-3 Aug 12	JBLE	ACC/A4, A4R, A4Q, A4V; SCOG, SCOS (x2); MXG; LRS; ALU/JLC
9-10 Aug 12	Scott	TRANSCOM J5/4; ACC/A4, A4M, A4O, A4R , A4T, IG; SCOW, SCOG, SCOS
16-17 Aug 12	JBMDL	CRW; MXG, APS, AMXS (x2), MXS; LRS; Mob Ops School, ALROC, ASAM
22-24 Aug 12	DC Area	HAF/A4/7, A4L, A4LF, A4LX, A8P; HQ DLA/J3(various), J6 (various)
6-7 Sep 12	Wright-Patt	AFMC/A4, AFMC/A4L

Interviews

The interview method seemed a likely means to acquiring data from the beginning. According to Yin in his series *Case Study Research*, the focused interview utilizes a semi-structured questions for a short (about an hour), single interface. He also warns against using leading questions and ensuring persons of different perspective are included if similar thoughts are echoed among several interviewees (Yin, 2009:107).

At each of the aforementioned locations (except for Sheppard AFB), the researchers conducted interviews with key leaders available to participate in this study. These interviews were used to report expert opinion on beneficial education opportunities, identify and understand the desirable logistics knowledge and business skills 21X officers should possess, and assess needed KSAs lacked by the Air Force Logistics Officer Corps. The majority of sessions were digitally recorded and all were manually noted by the research team. Finally, the researchers transcribed pertinent comments to electronic files to make analysis easier in Chapter 4.

After a brief introduction to why the team was conducting research and how focus groups would work, all interviewees were asked the office questions (OQ) listed next. All interviewees were provided the list of questions a week or more in advance along with the accompanying list of Logistics Knowledge and Business Skills. These same lists were used by Murphy and Poist to measure skill level requirement of senior-level logistics executives in their initial study (Murphy & Poist, 1991) then again longitudinally 16 years later, to track changes in priority skills required in a new era of logistics (Murphy & Poist, 2007).

Management Abilities from said studies were *not* provided to interviewees, but explained. The purpose in doing this was an assumption that PME courses given to all

officers (as opposed to courses specifically solely funded and created for logisticians) adequately address the abilities included on this list; that management abilities should only be included by respondent answers if they felt 21X officers needed training or education supporting management abilities (1) *beyond those of all other officer career fields* or (2) *at a point in an officer's career different than currently staged PME time windows*.

Questions were formulated to move from broad scope training and education down to directly addressing KSA needs. Before use, AFIT faculty reviewed the questions academically for validity; next, the sponsoring agency approved their use and confirmed these would provide adequate coverage of desired information. Interviewees were asked the following; Appendix F displays a generic package as interviewees would have received it on email prior to the scheduled office call.

OQ1. You have a cadet in your office for the summer “Operations Air Force” program. He really likes what your unit does and is interested in becoming a Logistics/Maintenance Officer. He has some play in his schedule and asks what courses you would recommend he take to finish up his time in college. What do you recommend? Why?

OQ2. You are at the Club and a young Company Grade Officer (CGO) in your unit tells you she is ready to start a master's degree program. She doesn't just want to “check the box” and really wants something that will help her in the 21X world. What type of program would you recommend? Why?

OQ3. What types of business skills do 21X officers need to be successful in the USAF? (See page 2 for industry examples; please include AF-specific skills as this list is not all-inclusive) Why?

OQ4. What types of logistics knowledge do 21X officers need to be successful in the USAF? (See page 2 for examples; it is not an all-inclusive list) Why?

OQ5. What knowledge, skills, and abilities do we lack in the 21X world that we need today? Why?

OQ6. What knowledge, skills, and abilities will the 21X community need in the next 5 years that there is not a developed need for today? Why?

OQ7. What benefits would today's Air Force and 21X community enjoy if we had these knowledge, skills, and abilities in questions 5 and 6 in place 5 years ago?

Demographics of personnel interviewed at listed locations are shown in Table 7. There were no interviews at Sheppard (only focus groups). Four key interviews that were unavailable while researchers were on station were conducted later over the phone. One special case not otherwise depicted as a location is a 21R Major from Army Logistics University, Ft Lee, VA—lumped into JBLE numbers below. Finally, two Mobility Pilots (AFSC 11M) were also interviewed as they were leading key logistics units at bases shown.

Table 7: Interviewee Ranks and AFSCs by Location

AFSC Location/Rank	21A/M					21R				11M	
	Maj	LtCol	Col	GO	Civ	Maj	LtCol	Col	Civ	LtCol	GO
JBC	2	1	1		1	1	1				
Tinker		1	1					3	1		
JBLE			2		2	1	3	1			
Scott			1	1				2	1		1
JBMDL	1	1			1	1			1	1	
DC Area			1	2				4			
Wright-Patt			1	1				1			
Totals	3	3	7	4	4	3	4	11	3	1	1

21A/M Total 21
 21R Total 21
 11M Total 2
 Participants 44

Focus Groups

To capitalize on physical presence on each base of interest, the researchers decided focus groups could provide a wide cross section of input in a shorter time, offer responses from many ranks in units of concentrated expertise and reap the benefits brainstorming has on the product a team can offer over an individual's response. In addition to shameless plugs for support with interviewees, the research team also solicited the assistance of

resident Logistics Officer Association (LOA) presidents to get the word out and book an appropriate room (typically in the base officers' club) to conduct these large breakout sessions. Describing the advantages of what he titled *The Group Depth Interview*, Goldman (1962) laid early groundwork for this method. Among the five advantages he argues this method brings to the researcher acting as a moderator, two specifically apply to this study. First, Goldman stated "the interaction among group members stimulates new ideas regarding the topic under discussion that may never be mentioned in individual interviewing" (Goldman, 1962:62). He also advocated that "discussion in a peer group often provokes considerably greater spontaneity and candor than can be expected in an individual interview" (Goldman, 1962:63). The other three advantages were all qualitative based results that were not captured as the research team did not observe the interpersonal activities occurring in each group. Often, the researchers brought many groups in a single location and moderated only from the front of the room and during facilitation walk-arounds; no observations of group dynamics were recorded, though (in hindsight) these observations would have been interesting to study.

Focus group exercises were conducted to generate lists of KSAs for each of the given mission sets. These exercises, proctored at the previously mentioned locations, led teams of 21X officers and civilian equivalents ranging from 2nd Lieutenant to Colonel. After groups were assigned to tables divided up by squadron (or division for command staffs), the whole room was given an introduction similar to that provided their leaders during the in-office interviews and each table handed a team packet (Appendix G).

Following the framework established by Gammelgaard and Larson's *Logistics Skills and Competencies for Supply Chain Management*, the research team asked its own version of

“What do you do as a logistics or supply chain manager?” in a format that further refined definitions to each mission set of interest (Gammelgaard & Larson, 2001:37). As shown on the first page of the packet, the teams first defined their agreed upon statement of what a logistics manager for a given mission set did. The intent here was to get “respondents to think about what they are actually going through, to get beyond the question of what skills and competencies they *think* they need (Gammelgaard & Larson, 2001:37).

Next, researchers captured answers to the selected framework’s second question “What knowledge or competencies do you seem to need in this process?”, substituting *mission set* for *process*; the outcome here being to get groups to list “what skills they are actually using on the job, and what they seem to be missing” (Gammelgaard & Larson, 2001:37). This second question was answered on the second page of each team’s packet, which was dubbed the KSA worksheet (Appendix G). Additionally, this worksheet captured an added layer of detail by asking groups to put an X next to any KSA they’d listed that they felt was not taught well or at all to managers in this mission set.

Additionally, demographics (Tables 8 and 9) were extracted from this second page. In the lower right, teams recorded their names, ranks, unit (as team name), and experience. The researchers clarified experience as performing any role in support of the mission as that focal group defined it on the packet’s first page.

The third page provided the means for directive content analysis; it listed all Logistics Knowledge, Business Skills *and* Management Abilities used by Murphy and Poist (1991, 2007). Participants were told to use this page as reference for developing the Air Force’s version of KSA list for each mission set prescribed. Groups were given the same explanation of the list as previously explained in the *interviews* section of this chapter. By

contrast, groups *were* provided the Management Abilities list with the belief that fewer questions could be answered in the time allotted in a large group setting; office interviews allowed discussion of each KSA as a potential management ability.

Table 8: Focus Group Participant Ranks and AFSCs by Location

AFSC	21A						21R						# Focus Groups
	Lt	Capt	Maj	Lt Col	Col	Civ	Lt	Capt	Maj	Lt Col	Col	Civ	
Location/Rank													
Sheppard		1	10	8	11	2							9
JBC	4	2	2	1			4	3	2	2			4
Tinker	2	1	3	2				2	1			5	4
JBLE				1				2	3	1		1	4
Scott	2	1	1		1			2	6			1	6
JBMDL	3	2	4	1			4	1	1			1	6
DC Area				2	1			2	1	5	4		6
Wright-Patt		1	1		1	1							1
Totals	11	8	21	15	14	3	8	12	14	8	4	8	40

21A Total 72

21R Total 54

Total Participants 126

Total Groups 40

Table 9: Focus Group Participant Mission Set Experience

All Participants	n = 126		21A n = 72		21R n = 54	
	#	Percent	#	Percent	#	Percent
Deployment	87	69%	44	61.11%	43	79.63%
Distribution	60	48%	14	19.44%	46	85.19%
Supply Management	61	48%	24	33.33%	37	68.52%
Repair Network	41	33%	32	44.44%	9	16.67%
Mission Generation	77	61%	58	80.56%	19	35.19%
Life Cycle Logistics	42	33%	24	33.33%	18	33.33%
Joint Logistics	47	37%	17	23.61%	40	74.07%

Inter-Service Literature Scanning

Finally, a scan of those documents presented in Chapter 2 sought to identify similarities and differences among officers in the defense Logistics Officer Corps based on job descriptions and existing research. The method employed was the previously described Summative Content Analysis. Comparisons and conclusions are reported in Chapter 4, which were agreed upon by personnel from each of the services' logistics officer AFSCs, MOSs or Designations. These men are all currently assigned to AFIT and are aware of Air Force Logistics Officer Corps composition.

Summary

Leaning on the established methods, questions, and lists of professional logistics researchers in the civilian sector, the researchers created interview questions and focus group tools to answer this study's investigative questions. Additionally, scans of sister service officer duty descriptions and research were used to identify differences in KSAs required among logistics officer in the joint arena. All results are covered in detail in the following chapter.

IV. Results and Analysis

Overview

This chapter revisits each IQ from Chapter 1, further specifying the Chapter 3 methods and tools used to answer each. In addition, successive levels of analysis are described to record how raw data was digested into useful information for Chapter 5 conclusions and recommendations. While overarching 21X and narrower 21A results are addressed, readers seeking 21R-specific results should reference Roberts' (2013) thesis.

IQ 1. What bachelor's courses/master's degree programs are beneficial to 21X Officers?

All interview answers to OQ 1 were coded and aggregated by the research team. Next, top 10 results are presented in Tables 10 and 11. The same process was accomplished using OQ 2 answers for Table 12 and 13 results. Note: Interviewees were allowed to list as many courses or programs as they desired; thus, sum of all percentages is not 100% for any given table.

Table 10: Bachelor's Courses for 21X Officer Candidates (All Interviews)

Overall	1	Logistics and Supply Chain Management	41%
	2	Quantitative Analysis (including statistics and modeling)	35%
	3	Leadership/Team Building	26%
	4	Business Management	20%
	5	Problem Solving/Critical Thinking	15%
	6	Process Improvement/Systems View of Processes/Quality Assurance	15%
	7	Communication (oral, written)	15%
	8	Not Technical (at this point)	13%
	9	HR Management/Personnel Management/Human Relations	13%
	10	Technical (engineering, aeronautical, industrial, etc)	11%

Table 11: Bachelor's Courses for 21X Officer Candidates (21A/M Interviews)

21A/M	1	Leadership/Team Building	33%
	2	Logistics and Supply Chain Management	24%
	3	Quantitative Analysis (including statistics and modeling)	24%
	4	Business Management	24%
	5	HR Management/Personnel Management/Human Relations	24%
	6	Technical (engineering, aeronautical, industrial, etc)	24%
	7	Problem Solving/Critical Thinking	19%
	8	Communication (oral, written)	19%
	9	Not Technical (at this point)	19%
	10	Process Improvement/Systems View of Processes/Quality Assurance	14%

Table 12: Master's Degree Recommendations (All Interviews)

Overall	1	Logistics Management	41%
	2	Master's in Business Administration	39%
	3	Anything from AFIT	32%
	4	Supply Chain Management	27%
	5	What The Officer Likes/Wants	25%
	6	Any type of Management	14%
	7	Project Management	11%
	8	Organizational <Change/Management/Dynamics>	11%
	9	Public Policy/Public Admin	11%
	10	Lifecycle Logistics	7%

Table 13: Master's Degree Recommendations (21A/M Interviews)

21A/M	1	Master's in Business Administration	48%
	2	Logistics Management	38%
	3	What The Officer Likes/Wants	38%
	4	Anything from AFIT	19%
	5	Supply Chain Management	19%
	6	Any Type of Management	14%
	7	Project Management	14%
	8	Organizational <Change/Management/Dynamics>	14%
	9	Public Policy/Public Admin	10%
	10	Lifecycle Logistics	10%

IQ 2. What are the AFSC-specific mission sets?

In the course of explaining the research goals to interviewees and focus groups alike, several charts were displayed from the study's sponsoring agency (Figures 6-8) to demonstrate how mission sets notionally overlap at the CGO, Field Grade Officer (FGO) and General Officer (GO) levels. Interviewee comments were noted (if any) when the model was displayed, while focus groups were given a more direct request for feedback.

The general consensus among the interviewees is that the listed mission sets of Joint Logistics, Life Cycle Logistics, Deployment & Distribution, Supply Management, Repair Network Integration, and Mission Generation *are* the primary mission sets of the 21X career field. However, several changes to the model were proposed.

First, Deployment and Distribution are different enough to be their own mission sets. This incite from a senior leader was acquired before field research began, so all data gathering for these missions was independently assessed throughout the study.

Second, the mission sets of Joint Logistics and Life Cycle Logistics do not align with what 21X officers have seen in the field. The pyramid shows that Life Cycle Logistics and Joint Logistics opportunities occur much later in one's career. Life Cycle Logistics begins at the Major level, and Joint Logistics begins at the Lieutenant Colonel and Colonel level. The responses received indicate that both Joint Logistics and Life Cycle Logistics should be their own separate pyramids in line with the other five at the entry level in order to capture reality. General consensus among 21A/M leaders is that Life Cycle Logistics billets *are* being filled by very young Lieutenants, but the practice is not looked upon favorably; 21A Leaders inside and outside of LCL offices felt new 21A Lieutenants needed rearing at operational bases to be effective contributors in the LCL business. From the 21R perspective, many examples

were provided of young Captains and Lieutenants deploying and filling Joint Logistics positions (formally-coded or not); this practice was more well-received and accepted than the LCL abomination; many leaders did comment on the need for better training and education earlier in an officer's career to fill this need. 21A/M interviewees echoed this sentiment about 21R Captains and Lieutenants who worked under them on various Joint Staff assignments.

Next, the term "Supply Chain Management" as a Mission Set is improper word choice. Several interviewees and focus groups explained inclusion of "Chain" here would incorporate all other mission sets listed. For this study, the term "Supply Management" has replaced the original Supply Chain Management as shown in the model and on the focus group worksheets. In consideration of definitions supplied in the HCS and 21R CFETP of Supply (or Material) Management, it appears this is how focus groups populated the KSA worksheet instead of listing full-bore Supply Chain Management KSAs.

As an aesthetics comment, the pyramid structure was noted as lacking all possible combinations of mission set overlap. For instance, you cannot see overlap between the Deployment and Mission Generation mission sets exclusively. While many Venn diagrams could more accurately display all overlaps mathematically possible, the opinion of the sponsors and researchers remain that this model depicts the notion well enough.

On the first page of their packet (Appendix G), focus group members were asked to identify and define any mission set that the model lacked in "What does a _____ Manager do in the USAF?" section. Of the 40 teams, 6 provided write-ins. Only "Human Capital" Manager was a repeat recommendation (2 groups). Other mission sets offered were Fuels Management, Programs Management, Acquisitions Management, and Depot

Maintenance. While important, Human Capital Management does not seem a uniquely logistics mission set, but rather a function required within all missions within and beyond the logistics realm. Fuels Management was considered and seems more a component of Supply Management; the same can be said for Program Management and Acquisition Management as components of the Life Cycle Logistics mission and Depot Maintenance as a contributor to the Repair Network Integration mission. Therefore, none of the five nominations were further analyzed here nor are they recommended as additions to future efforts.



21st Century Logistics Officer: A Way Ahead

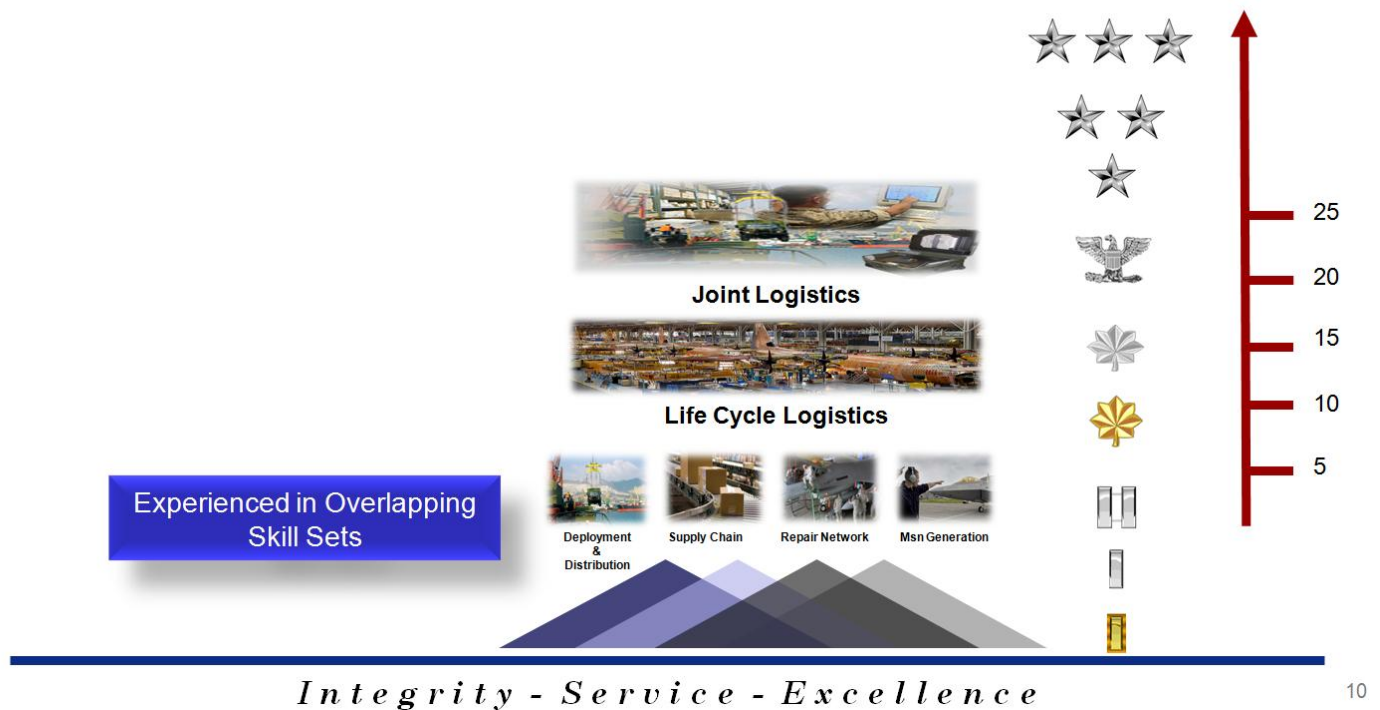


Figure 6: CGO Model Indicating Overlapping Mission Sets (Cooper, 2012)



21st Century Logistics Officer: A Way Ahead

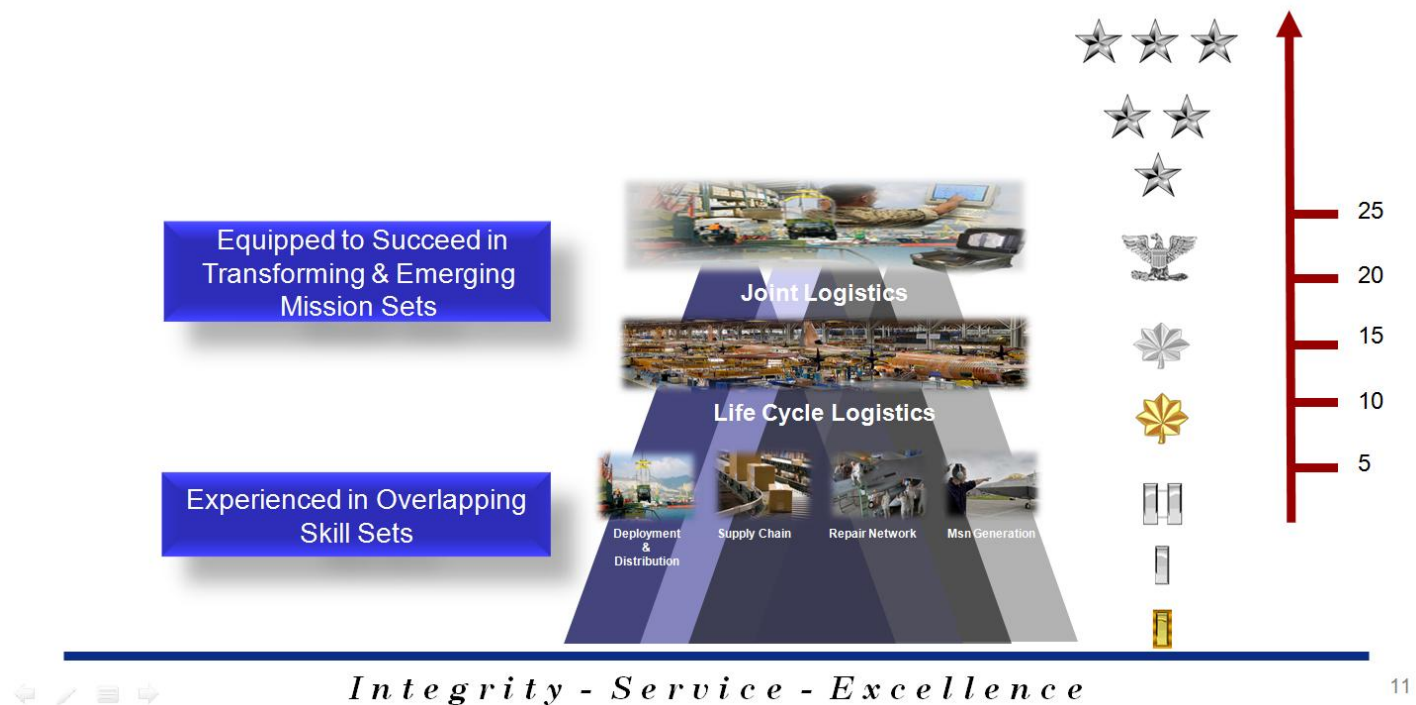


Figure 7: FGO Model Indicating Increased Overlap of Mission Sets (Cooper, 2012)



U.S. AIR FORCE

21st Century Logistics Officer: A Way Ahead

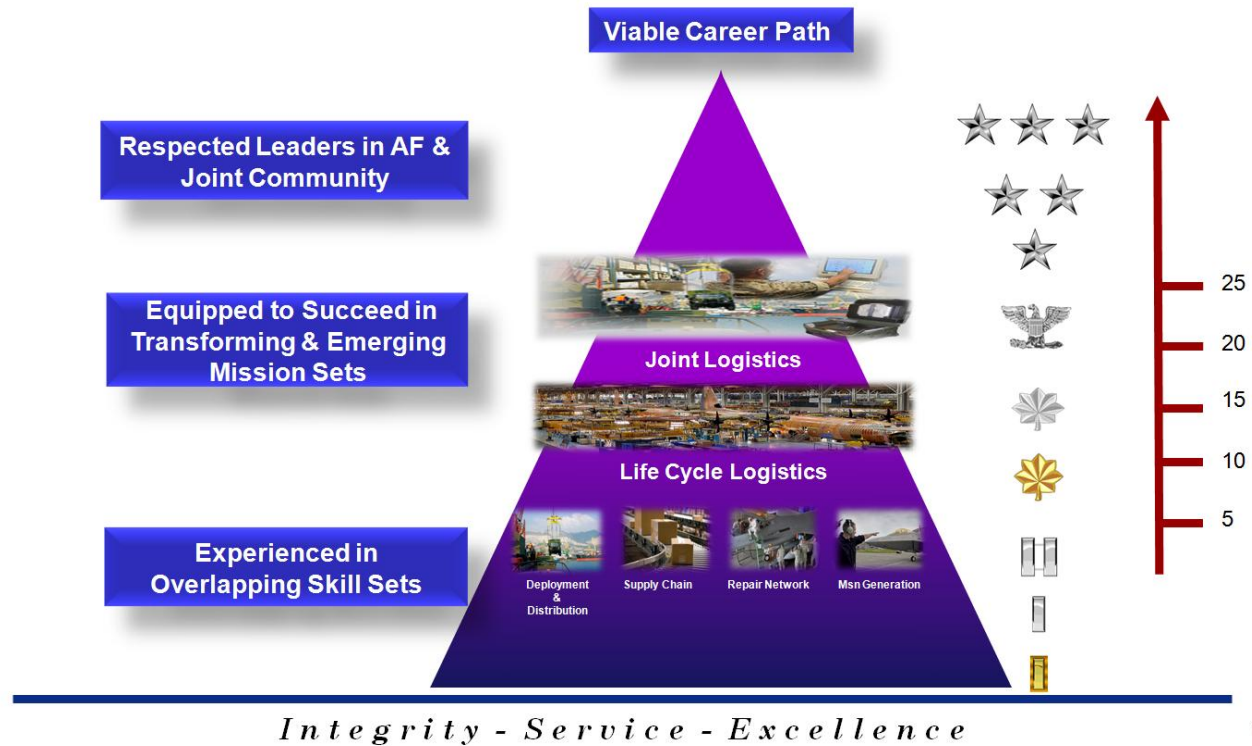


Figure 8: GO Model Indicating Complete Overlap of Mission Sets (Cooper, 2012)

IQ 3. What are the primary KSAs for each mission set?

Using the second page of the focus group packet (“KSA Worksheet” in Appendix G), results were compiled into aggregate lists for each mission set showing all 40 focus groups’ write-ins; the following tallies total write-ins for each list: Distribution (318), Distribution (237), Supply Management (275), Repair Network Integration (179), Mission Generation (339), Lifecycle Logistics (213), Joint Logistics (202). These lists were reviewed and coded independently by four Captains attending AFIT (two 21A, two 21R), which included both members of the research team. The foursome reconvened and consolidated blind lists down to one common version which is hereafter referred to as the list of *Parent KSAs*. This list of 63 parent KSAs and the child KSAs they represent can be found at Appendix H.

The tables here represent the count (Ct) of total write-ins attributed to each parent KSAs. Also displayed are the group frequencies (Gps), indicating the number of different groups contributing to the KSA count. Finally, KSAs were subdivided into three categories based on the number of groups that backed each KSA: High, Medium and Low Occurrence. Referencing Table 5, the significance of three groups is established on the expected minimum representation of units for each mission set. Hence, six or more groups indicated high occurrence, three to five groups indicated medium occurrence, and one to two groups indicated low occurrence. Visually, you can see these subdivisions are approximately equal in number of KSAs included (except for low occurrence for Joint Logistics); this may be due to greater expanse of roles one might serve in this mission set.

Of the total 1,763 write-ins provided, 25 were excluded in analysis because they used a mission set title as a KSA for another mission set. This was done to avoid circular logic in analysis. The breakdown of counts was “Deployment” (3), “Distribution” (9), “RNI” (1), “Mission Gen” (7), “LCL” (5), and “Joint Logistics” (0). Of note, the mission set Supply Management was shown as “Supply Chain Management” during field research. Due to high rates of occurrence and the gained understanding from IQ 2 of the mission set mislabeling, the KSA “Supply Chain Management” is analyzed.

Finally, another 34 write-ins were either too vague to categorize or written illegibly, and so were also excluded. Examples include “Make Log 199/299 Mandatory”, “Hands On Training” and “Resources”. The recommendation for Log courses covers many/all mission sets, yet not a specific KSA. Likewise, the latter two examples do not specify enough detail to be of analytical use.

Table 14: Repair Network Integration KSAs

REPAIR NETWORK INTEGRATION							
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct Gps</i>
Repair Cycle	25	16	Analysis	5	5	Leadership	2 2
Asset Management	10	10	Business Acumen	10	5	Packaging/Crating/Palletizing	2 2
Forecasting	10	10	Governing Documents	5	5	Aircraft Generation	1 1
Scheduling	9	9	Safety	5	5	Enterprise Logistics	1 1
Information Management	8	8	Acquisitions	4	4	Flightline Operations	1 1
Funding	9	7	Cargo Movement	4	4	International Logistics	1 1
Personnel Management	8	7	Communication	4	4	Plans Management	1 1
Process Improvement	8	6	Contracting	4	4	UTC Management	1 1
Production Management	7	6	Customer Service	4	4	Warehouse Management	1 1
			Disposition	5	4	Flying Hour Program	1 1
			Industrial Engineering	5	4		
			Supply Chain Management	4	4		
			Sourcing	3	3		
			Systems Engineering	3	3		

Table 15: Mission Generation KSAs

MISSION GENERATION								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Scheduling	24	21	Flightline Operations	12	5	Aerospace Planning	3	2
Personnel Management	29	18	Fuels Management	5	5	Contracting	2	2
Repair Cycle	22	18	Funding	5	5	Munitions Management	2	2
Business Acumen	31	14	Installation Deployment Planning	5	5	Personnel Movement	2	2
Forecasting	13	13	Adaptability	4	4	UTC management	2	2
Analysis	20	12	Customer Service	4	4	Acquisitions	1	1
Leadership	14	11	Equipment Management	4	4	Air Cargo Procedures	1	1
Flying Hour Program	13	10	Readiness	4	4	Deployable Skills	1	1
Communication	11	9	Aircraft Generation	3	3	Enterprise Logistics	1	1
Information Management	10	9	Asset Management	3	3	MICAPS	1	1
Production Management	9	9	Disposition	3	3	Systems Engineering	1	1
Governing Documents	10	8	Industrial Engineering	4	3	Vehicle Management	1	1
Supply Chain Management	8	8	Plans Management	3	3			
Safety	9	7	Sourcing	3	3			
Weapons System Knowledge	9	7						
Cargo Movement	6	6						
Process Improvement	7	6						

Table 16: Lifecycle Logistics KSAs

LIFECYCLE LOGISTICS							
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i> <i>Gps</i>
Acquisitions	13	13	Analysis	6	5	Communication	2 2
Business Acumen	25	13	Research and Development	6	5	Enterprise Logistics	1 1
Repair Cycle	17	13	Supply Chain Management	5	5	Equipment Management	1 1
Forecasting	12	12	Customer Service	4	4	International Logistics	1 1
Contracting	14	11	Adaptability	3	3	Leadership	4 1
Disposition	11	9	Industrial Engineering	3	3	Packaging/Crating/Palletizing	1 1
Funding	13	9	Plans Management	3	3	Production Management	1 1
Process Improvement	10	8	Requirements	8	3	Stock Control Processes	2 1
Asset Management	8	6	Scheduling	3	3		
Governing Documents	7	6	Warehousing Management	3	3		
Information Management	7	6					
Personnel Management	7	6					
Sourcing	6	6					

Table 17: Joint Logistics KSAs

JOINT LOGISTICS								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Service Culture/Org Capabilities	26	15	Asset Management	5	5	Acquisitions	2	2
Communication	13	11	Business Acumen	11	5	Adaptability	2	2
Governing Documents	13	11	Contracting	4	4	Deployable Skills	2	2
Cargo Movement	15	10	Customer Service	4	4	Industrial Engineering	2	2
Information Management	16	10	Enterprise Logistics	3	3	Personnel Movement	2	2
Plans Management	13	9	Forecasting	3	3	Supply Chain Management	2	2
International Logistics	9	8	Funding	3	3	Aerospace Planning	1	1
Sister Service Interoperability	10	8	Leadership	6	3	Air Cargo Procedures	1	1
Classes of Supply	6	6	Personnel Management	4	3	Base Support/Exped Site Planning	1	1
						Deployment Ops - Site Surveys	1	1
						Disposition	1	1
						Equipment Management	1	1
						Packaging/Crating/Palletizing	1	1
						Port Management	1	1
						Process Improvement	1	1
						Production Management	1	1
						Repair Cycle	2	1
						Safety	1	1
						Stock Control Processes	1	1
						Systems Engineering	1	1
						TPFDD Management	1	1
						Warehouse Management	1	1

IQ 4. What KSAs overlap into multiple mission sets?

After establishing each mission set's KSAs, a macro analysis to find parent KSAs spanning two or more mission sets was conducted. The tables that follow use a coding system used in the KSA Worksheet which label the mission sets as:

- (A) Distribution
- (B) Deployment
- (C) Supply Management
- (D) Repair Network Integration
- (E) Mission Generation
- (F) Lifecycle Logistics
- (G) Joint Logistics

In addition, two AFSC-specific categories are also analyzed as officers from a given AFSC will receive technical training at a minimum in each of their core mission sets. So, these divisions have been colored coded here to highlight mission sets D and E are typically 21A-specific mission sets (Gray) and the focus of Table 18, while A, B, and C as traditionally 21R-specific mission sets (Red) in Tables 19-21. F and G are analyzed independently (Blue and Purple respectively) in Tables 22 and 23. Finally, any KSA that spans both AFSCs is yellow and yields the answer to this IQ, the Common Overlapping KSAs (Yellow) of Table 24.

For similar reasons to those explained in IQ 3, these tables are also stratified by high, medium and low occurrence of groups. The twist here is multiple mission sets are examined at once; therefore, occurrence reporting now includes mission sets that had 6 *or more* groups as high, 3 *or more* as medium, and 1 *or more* groups as low. For this reason, the few mission

sets with high occurrence for a KSA also appear in the medium and low columns with their less common sister missions. The tier identifiers to the far left of each table will be discussed at length in the recommendations section of Chapter 5.

In an effort to clarify these complex tables, this example will interpret the meaning of codes for Process Improvement in Table 18. The KSA, Process Improvement had an agreement of 6 or more teams that this KSA is important for RNI (D), Mission Generation (E) and Lifecycle Logistics (F). Because Deployment (A), Distribution (B), and Supply Management (C) each received less than 6 groups approval, they are not displayed in this High column for Process Improvement. Therefore, the cell is colored gray because it includes only mission sets from traditionally 21A duties (D and E) and is not swayed by the inclusion of the non-AFSC specific Lifecycle Logistics (F). Now moving to the Medium column of the same KSA shows mission sets A and C have been added to the code. This denotes that A and C had 3-5 groups recommending Process Improvement as important to these two additional mission sets. Also, because these additions come from traditionally 21R mission sets, the cell is now colored yellow as the code ACDEF includes mission sets in both 21A and 21R territory. Finally, the low column shows 1 to 2 groups also agreed that Process Improvement was important for B and G. This means all mission sets (ABCDEFGG) had at least 1-2 teams report that process improvement was important; the cell remains yellow as it spans both AFSCs.

Table 18: 21A Focal KSAs

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 1	Flying Hour Program	E	E	E
	Weapons System Knowledge	E	E	E
	Communication	EG	ACDEG	ABCDEFG
	Process Improvement	DEF	ACDEF	ABCDEFG
	Production Management	DE	CDE	ABCDEFG
	Scheduling	DE	ADEF	ABCDEF
Tier 2	Flightline Operations		E	BDE
	Systems Engineering		D	ABDEG

Table 19: 21R Focal KSAs (Tier 1)

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 1	Industrial Engineering	B	BDEF	ABCDEFG
	Installation Deployment Planning	A	AE	AE
	Readiness	A	AE	AE
	Contracting	CF	ABCDFG	ABCDEFG
	Customer Service	BC	ABCDEFG	ABCDEFG
	Disposition	CF	BCDEF	ABCDEFG
	Plans Management	ABG	ABCEFG	ABCDEFG
	Sourcing	CF	BCDEF	BCDEF
	UTC Management	A	A	ADE
	Enterprise Logistics	C	BCG	BCDEFG
	Packaging/Crating/Palletizing	B	ABC	ABCDFG
	Personnel Movement	AB	AB	ABEG
	Warehouse Management	BC	BCF	BCDFG
	Base Support and Expeditionary Site Planning	A	A	AG
	Deployment Operations - Site Surveys	A	A	AG
	Stock Control Processes	C	C	BCFG
	TPFDD Management	A	A	AG

Table 20: 21R Focal KSAs (Tier 2)

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 2	Aerospace Planning		A	AEG
	Air Cargo Procedures		B	ABEG
	Deployable Skills		A	AEG
	MICAPs		C	CE
	Vehicle Management		B	BCE
	Port Management		AB	ABCG

Table 21: 21R Focal KSAs (Tier 3)

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 3	Cargo Deployment Function			A
	Household Goods			B
	Shelf Life Program			B
	Support Agreements			A
	Air Trans			AB
	Mobility Operations			AB
	WRM Management			AC

Table 22: Lifecycle Logistics Focal KSAs

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
T1	Acquisitions	F	CDF	ABCDEFGF
T2	Research and Development		F	F
	Requirements		F	CF

Table 23: Joint Logistics Focal KSAs

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 1	International Logistics	G	ABG	ABCDEFGF
	Classes of Supply	G	G	G
	Service Culture/Org Capabilities	G	G	G
	Sister Service Interoperability	G	G	G

Table 24: Common Overlapping KSAs

		High (6+ Gps)	Med (3+ Gps)	Low (1+ Gps)
Tier 1	Analysis	CE	CDEF	ABCDEF
	Asset Management	CDF	BCDEFG	ABCDEFG
	Business Acumen	ABCEF	ABCDEFG	ABCDEFG
	Cargo Movement	ABCEG	ABCDEG	ABCDEG
	Forecasting	ACDEF	ABCDEFG	ABCDEFG
	Funding	CDF	ABCDEFG	ABCDEFG
	Governing Documents	ABEFG	ABCDEFG	ABCDEFG
	Information Management	ABCDEFG	ABCDEFG	ABCDEFG
	Leadership	AE	ABEG	ABCDEFG
	Personnel Management	ADEF	ABCDEFG	ABCDEFG
	Repair Cycle	CDEF	CDEF	ABCDEFG
	Safety	BE	ABDE	ABCDEG
	Supply Chain Management	BE	ABCDEF	ABCDEFG
Tier 2	Adaptability		AEF	ABCEFG
	Aircraft Generation		AE	ADE
	Equipment Management		CE	ACEFG
	Fuels Management		BCE	BCE
T3	Munitions Management			CE

IQ 5. What KSAs do we currently lack and/or not teach well/at all?

To answer this IQ, portions of the question were posed to both interviewees and focus groups. First, the research team aggregated top answers given by interviewees to OQ 5: *What knowledge, skills, and abilities do we lack in the 21X world that we need today?* Answers are reported below according to all interviewees (Table 25) and then just the 21A/M officers (Table 26).

Table 25: KSAs 21X Community Lacks Today (All Interviews)

Overall	1	Enterprise View/Interrelating Pieces	24%
	2	Depth	15%
	3	Communication (oral/written)	12%
	4	Process Improvement	12%
	5	Joint Awareness	12%
	6	Leadership Abilities	10%
	7	Critical Thinking/Root Cause Analysis	10%
	8	Field Experience	10%
	9	Information Technology	7%
	10	HR Management/Labor Management	7%

Table 26: KSAs 21X Community Lacks Today (21A/M Interviews)

21A/M	1	Enterprise View/Interrelating Pieces	21%
	2	Leadership Abilities	16%
	3	Process Improvement	16%
	4	Field Experience	16%
	5	Communication (oral/written)	11%
	6	HR Management/Labor Management	11%

With respect to focus groups, each team was asked to mark the KSA Worksheet (Appendix G) with an X in the small column to the left of write-ins their team felt was not taught well or at all. After the coding process described in IQ 3 was complete, results of this additional identifier were also aggregated. The tables below are formatted in

similar fashion to the tables of IQ 3, showing high (6+ groups), medium (3-5 Groups) and low (1-2 groups) occurrence of perceived poor training/education of specific KSAs. The various tables display all KSAs with all teams (Table 27), all KSAs with only teams comprised of 21As (Table 28), and KSAs according to each of the mission sets of RNI, Mission Generation, Lifecycle Logistics and Joint Logistics (Tables 29-32).

Table 27: KSAs Not Taught Well/At All (All Teams, All Mission Sets)

<u>ALL 21X MISSIONS, ALL TEAMS</u>								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Information Management	36	13	Funding	15	5	Safety	4	2
Business Acumen	23	11	Forecasting	14	5	Enterprise Logistics	3	2
Personnel Management	12	10	Leadership	11	5	Asset Management	2	2
Acquisitions	11	9	Process Improvement	9	5	Classes of Supply	2	2
Cargo Movement	12	7	Governing Documents	8	5	Deployable Skills	2	2
Contracting	12	6	Repair Cycle	8	5	Flightline Operations	2	2
Service Culture/Org Capabilities	12	6	Analysis	7	5	Flying Hour Program	2	2
Plans Management	10	6	International Logistics	7	4	Installation Deployment Planning	2	2
			Personnel Movement	6	4	Equipment Management	2	1
			Communication	5	4	Sister Service Interoperability	2	1
			Packaging/Crating/Palletizing	5	4	Stock Control Processes	2	1
			Supply Chain Management	5	4	Adaptability	1	1
			TPFDD Mgmt	5	4	Air Cargo Procedures	1	1
			Customer Service	11	3	Munitions Management	1	1
			Disposition	7	3	Production Management	1	1
			Industrial Engineering	7	3	Research and Development	1	1
			Scheduling	6	3	Systems Engineering	1	1
			Sourcing	3	3	WRM Management	1	1
			Warehouse Management	3	3			

Table 28: KSAs Not Taught Well/At All (21A Teams, All Mission Sets)

ALL MISSIONS, 21A TEAMS								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Personnel Management	10	8	Contracting	11	5	Customer Service	5	2
Information Management	20	7	Acquisitions	6	5	International Logistics	3	2
Business Acumen	13	7	Funding	13	4	Packaging/Crating/Palletizing	3	2
			Cargo Movement	9	4	Governing Documents	3	2
			Service Culture/Org Capabilities	9	4	Disposition	2	2
			Repair Cycle	6	4	Flying Hour Program	2	2
			Leadership	5	4	Personnel Movement	2	2
			Communication	4	4	Process Improvement	2	2
			Forecasting	11	3	Scheduling	2	2
			Plans Management	5	3	Industrial Engineering	4	1
			Analysis	4	3	Safety	3	1
						Sister Service Interoperability	2	1
						Sourcing	2	1
						Warehouse Management	2	1
						Adaptability	1	1
						Air Cargo Procedures	1	1
						Asset Management	1	1
						Deployable Skills	1	1
						Flightline Operations	1	1
						Installation Deployment Planning	1	1
						Munitions Management	1	1
						Production Management	1	1
						Research and Development	1	1
						Systems Engineering	1	1
						TPFDD Mgmt	1	1

Table 29: KSAs Not Taught Well/At All (Repair Network Integration)

REPAIR NETWORK INTEGRATION								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
			Funding	4	3	Disposition	2	2
						Forecasting	2	2
						Information Management	2	2
						Scheduling	2	2
						Business Acumen	1	1
						Contracting	1	1
						Customer Service	1	1
						Flightline Operations	1	1
						Industrial Engineering	2	1
						Leadership	1	1
						Packaging/Crating/Palletizing	1	1
						Personnel Management	1	1
						Process Improvement	1	1
						Sourcing	1	1
						Supply Chain Management	1	1
						Systems Engineering	1	1

Table 30: KSAs Not Taught Well/At All (Mission Generation)

<u>MISSION GENERATION</u>								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
			Personnel Management	5	5	Customer Service	2	2
			Business Acumen	4	4	Flying Hour Program	2	2
			Funding	3	3	Forecasting	2	2
			Information Management	3	3	Leadership	2	2
						Repair Cycle	2	2
						Supply Chain Management	2	2
						Air Cargo Procedures	1	1
						Analysis	1	1
						Communication	1	1
						Contracting	1	1
						Disposition	1	1
						Flightline Operations	1	1
						Installation Deployment Planning	1	1
						Munitions Management	1	1
						Personnel Movement	1	1
						Plans Management	1	1
						Process Improvement	1	1
						Scheduling	1	1
						WRM Management	1	1

Table 31: KSAs Not Taught Well/At All (Lifecycle Logistics)

LIFECYCLE LOGISTICS								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Business Acumen	7	7	Acquisitions	5	5	Customer Service	2	2
			Contracting	4	4	Disposition	2	2
			Forecasting	4	4	Personnel Management	2	1
			Analysis	4	3	Stock Control Processes	2	1
			Funding	4	3	Enterprise Logistics	1	1
			Process Improvement	3	3	Equipment Management	1	1
			Repair Cycle	3	3	Industrial Engineering	1	1
						Information Management	1	1
						Plans Management	1	1
						Research and Development	1	1
						Warehouse Management	1	1

Table 32: KSAs Not Taught Well/At All (Joint Logistics)

<u>JOINT LOGISTICS</u>								
<i>High Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Medium Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>	<i>Low Occurrence KSA</i>	<i>Ct</i>	<i>Gps</i>
Service Culture/Org Capabilities	12	6	Information Management	6	4	Cargo Movement	2	2
			Governing Documents	5	4	Classes of Supply	2	2
			Communication	4	4	Leadership	2	2
			International Logistics	3	3	Plans Management	2	2
						Sister Service Interoperability	2	1
						Acquisitions	1	1
						Asset Management	1	1
						Contracting	1	1
						Customer Service	1	1
						Deployable Skills	1	1
						Enterprise Logistics	1	1
						Forecasting	1	1
						Industrial Engineering	1	1
						TPFDD Mgmt	1	1

IQ 6. What problems are coming in the foreseeable future; what KSAs are needed to respond to them?

To get an understanding of tools the 21X community will need in the near future, the research team asked interviewees OQ 6: *What knowledge, skills, and abilities will the 21X community need in the next 5 years that there is not a developed need for today? Why?* As with other office questions, the researchers coded then aggregated responses for both portions of the question: Future Challenges for all interviews (Table 33) and 21A/M interviews (Table 34) as well as KSAs needed to respond to them (Table 35, 36).

Table 33: Future Challenges (All Interviews)

Overall	1	Limited Resources	43%
	2	Understanding Generational/Cultural Differences	8%
	3	Afghan Drawdown/Air Base Closings/Openings	8%
	4	Lack of Depth of Logistics Knowledge	5%

Table 34: Future Challenges (21A/M Interviews)

21A/M	1	Limited Resources	50%
	2	Understanding Generational/Cultural Differences	11%
	3	Afghan Drawdown/Air Base Closings/Openings	6%

Table 35: KSAs Needed In The Near Future (All Interviews)

Overall	1	Process Improvement	20%
	2	Joint Operations and Joint Staff Functions	20%
	3	Business Acumen (Business Case Analysis/Prioritize Resources)	18%
	4	Funding	15%
	5	Deployed Operations (FOB/Bare Base Operations)	10%
	6	Depth of Logistics Knowledge (Intentional Stovepiping)	10%
	7	Leverage Commercial Technology	8%
	8	Information Management (ERP/ECSS/IT)	8%
	9	Resiliency	5%
	10	Cargo Movement (Intermodal Trans)	5%
	11	Adaptability/Multifunctional/Combine 21A/R	5%

Table 36: KSAs Needed In The Near Future (21A/M Interviews)

21A/M	1	Business Acumen (Business Case Analysis/Prioritize Resources)	28%
	2	Process Improvement	22%
	3	Joint Operations and Joint Staff Functions	17%
	4	Resiliency Training	11%
	5	Funding	11%
	6	Adaptability/Multifunctional/Combine 21A/R	11%

IQ 7. What KSAs do other services Logistics Officers acquire that USAF Logistics Officers do not?

During the study, participants everywhere were anxious to share their theories on why 21X officers were not being selected for joint duty. One theme suggested other services include broader responsibilities for their logistics officers assigned. To properly scope this IQ, a comprehensive review of all KSAs needed by the other services is required, but due to time and accessibility constraints was not performed. Instead, a review of common Department of Defense Occupational Codes assigned to each Logistics Officer MOS, Designation, or AFSC by the owning service components was reviewed which revealed some telling information (Office of the Under Secretary of Defense for Personnel and Readiness, 2001).

Table 37 includes each service's Logistics Officer Corps as well as non-logistics officer AFSC equivalents (displayed as gray columns). These additions are AFSCs that carried a common DoD Occupation Code with sister service logistics officers that were not noted in the USAF Logistics Officer Corps AFSCs(20C0, 21A, 21M, 21R). The officer communities in this category include Combat Control (13D), Force Support (38F—more specifically their 34M Services predecessors), Acquisition Managers (63A), Contracting (64P), Audit (65A), Finance (65F) and Cost (65W) officers. Codes that are gaps (and the answer to this IQ) are highlighted in yellow. Complete descriptions of each DoD Occupational Code are in Appendix I. Due to formatting limitations, the word “Procurement” was shortened to “Procure” in both instances on Table 37.

Table 37: Comparison of Logistics Officer DoD Occupational Codes (DoDOCCs)

DoDOCCs/Service Codes	USAF Logistics Officers				Equivalent AFSCs			USA Logistics Branch	USN Logistics (Supply Corps) Officers**							USMC Logistics Officers								
	Logistics Commander (20C0)	Aircraft Maintenance Officer (21A)	Missile and Munitions Maintenance Officer (21M)	Logistics Readiness Officer (21R)	Combat Control (13D)	Force Support (38F)***	Acquisition Manager/Contracting (63A/64P)	Audit/Finance/Cost Officers (65A/F/W)	Transportation (88)	Multifunctional Logistician (90)	Ordnance (91)	Quartermaster (92)	Fiscal Group1000-1099	Subsistence, Open Mess and BQ Management Group (1100-1199)	Transportation Group (1200-1299)	Material Distribution Group (1300-1399)	Procurement Group (1400-1499)	Inventory Control Group (1500-1599)	Gen Group, Supply and Fiscal Group(1900-1999)	Logistics Officer (0402)	Combat Engineer (1302)	Ground Supply Officer (3002)	Aircraft Maintenance Officer (6002)	Aviation Supply Officer (6602)
2205-Ground & Naval Arms					X																X			
2404- Aviation Mx and Allied		X																					X	
2405-Ordnance			X							X														
2704- Comptrollers & Fiscal								X				X												
2801-Logistics General	X			X*					X		X				X	X			X	X				
2802-Supply				X*							X					X		X	X			X		X
2803- Transportation				X*					X						X									
2804- Procure/Production							X									X	X							
2805- Food Service						X							X											
2806- Exchange/Commissary						X										X			X					
2807- Other Supply/Procure						X							X											

* 21R DoDOCCs were derived from 21G, 21L, 21G, 21T listings as publishing date (2001) was prior to 21R merger (2002)

** Aircraft Maintenance Duty Officer was not shown as the USN does not recognize them as logisticians; however, they were coded 2404 like 21As.

*** 34M Services Officer was actually listed here, but has since been merged into 38F (2008) since publishing date (2001)

Summary

The results of field research document education favorable to advancing the careers of 21X officers and verified the mission sets these officers execute. Also, KSAs useful for each mission set were identified by frequency of mention, cross-analyzed to reveal significant overlap between mission sets, and assessed for perceived quality and availability of courses to train and educate the Air Force Logistics Officer Corps. Next, several future KSAs were reported. Finally, an analysis of career field codes identifying all members of the Defense Logistics Officer Corps revealed potential experience gaps in the Air Force Logistics Officer portfolio. Recommendations for these findings are offered in Chapter 5.

V. Recommendations and Conclusions

Overview

Recommendations in this chapter spawn from Chapter 4 findings as well as holistic impressions left by interviewees and focal groups. First to be discussed is the heart of this study; the investigation of opportunities to consolidate training and education between 21A and 21R officers. Then, synergistic benefits of incorporating the LRS into the maintenance group at the operational wing are proposed. Following that, an alternative means of deliberate career path progression for 21As is offered. Finally, recommendations for future research are listed.

Usefulness of Overlapping KSAs

First, recall the tables (18-24) produced for IQ 4 in Chapter 4. Each Tier 1 list is a grouping of KSAs very common, regardless of duty assignment. Therefore, it is recommended these KSAs be included in technical schooling. As for medium occurring Tier 2 KSAs, non-technical school classroom courses or online training are recommended to retain highly standardized lessons across the Air Force. Lastly, Tier 3's low occurring KSAs may only be needed by a smaller portion of the population and are therefore prime candidates for AMMOS- and/or ALROC-graduate led classes to the local officers on an as needed basis. These base-level teaching opportunities are discussed more in the next section, *Benefits of LRS Realignment*.

Next, a means to divide and conquer the list of KSAs in order to consolidate courses smartly is needed. To borrow an example from the programming community, a lead integrator is recommended for consolidation of KSAs taught in each color category from IQ

4 results (Common-Yellow, 21A-Gray, 21R-Red, LCL-Blue and Joint Logistics-Purple). As a Core Function Lead Integrator (CFLI), a Major Command is selected to represent all budgeted programs assigned to one of the Air Force's core functions; the CFLI is normally the biggest (but not the only) shareholder of assets for said function. Similar to the CFLI concept, these 21X academic lead integrators should be charged with reviewing the entire portfolio of courses identified as teaching a given KSA, then offer their most efficient recommendation to A4LF for courses to retain and lose the responsibility of teaching the KSAs over which they have been designated lead.

Following are the proposed lead integrators. Because of their mission today, serving the entire 21X population, the AFIT School of Systems and Logistics (AFIT/LS) should be given lead of all KSAs listed in Table 24, which are identified as having a common need among both 21A and 21R officers. It follows that the KSAs which 21As are most likely to need (Table 18) should be led by the 363d Training Squadron at Sheppard AFB, TX. Likewise, the KSAs of Tables 19-21 should then be under direction of the 21R schoolhouse's 344th Squadron of Joint Base San Antonio, TX. For Lifecycle Logistics, AFIT/LS should again take lead integrator role due to their collocation at Wright-Patterson with the Lifecycle Management Center; not to mention AFIT/LS is also the schoolhouse for 63A Acquisition Management Officers. Finally, ALROC staff is recommended as the lead for Joint Logistics lead integrator due to their mission focus and exposure to the entire spectrum of Air Force and Joint Logistics communities (see detailed discussion of JBMDL benefits in "Joint Logistics Officers" sub-section of this chapter). With each lead integrator handling their assigned lists, all KSAs across all Air Force owned courses will be assessed with the end goal being elimination of redundancy and strengthening course materials

retained. Tables 27-32 express opinions for KSAs not taught well or at all, but should be considered during this process.

Efficiencies can be gained through combining courses or colocating them to take advantage of common instructors for blocks of material needed by multiple audiences. As an example, Fike (2010) mentioned AMMOS and ALROC share 50% of their curricula in common. An informal survey of AMMOS graduates during the course of this research indicated no benefits of AMMOS remaining at Nellis; there is minimal interaction with the pilot Weapons Schools, the trips (no longer funded) to strategic locations (CRW at Travis AFB, CA; Air Force Combat Ammunition Center at Beale AFB, CA; USTRANSCOM and AMC Headquarters at Scott AFB, IL and Boeing's nearby Joint Direct Attack Munitions factory in Saint Louis, MO; ACC Headquarters and USA Aviation Logistics School at JBLE) are not cheaper if flying from Nellis vice another base, and the lessons actually taught outside of the classroom could have been executed on any base with a flightline. ALROC, on the other hand, has many benefits of staying at JBMDL; it is a joint base, home of a MXG and LRS but also the less common CRW and an Aerial Port Squadron (APS). Additionally, JBMDL is also home of the USAF Expeditionary Center (USAF/EC) with its Mobility Operations School (which includes ALROC and ASAM—a satellite school for AFIT faculty to teach Logistics and SCM to students in this Masters Degree Program focused on AMC); and finally JBMDL is also centrally located between the NDU's Center for Joint and Strategic Logistics (3 hours driving time); Navy Supply Corps School (4.5 hours); and Army Logistics University (5 hours), making for inexpensive travel; not to mention the AMMOS trips to a CRW, JBLE and numerous defense contractor factories

would be within driving distance. Therefore, this study recommends basing both advanced courses at JBMDL.

And now, consider the option of traveling instructors. This is already the normal mode of operation for AFTT/LS “resident” courses. Additionally, the AFTT/ENS graduate school faculty travel to JBMDL regularly as the professors of resident ASAM students nearly 600 miles away. The 21A and 21R schoolhouses, both in Texas, are approximately 400 miles apart and could draw up efficiencies to teach stronger and consistent KSAs by appropriate staffs. One may also argue that Aircraft Generation and other KSAs common to both AFSCs may be best taught to the 21R students by bussing a class up to Sheppard for several days in order to experience the computerized Aircraft Generation simulator first hand and interface with their 21A peers, learning the same KSA. Though a much shorter drive, this was the practice for several weeks of interaction during PME between whole classes in the Senior Non-Commissioned Officer Academy at Gunter Annex, Maxwell AFB, AL and neighboring Aerospace Basics Course for Lieutenants at Maxwell AFB, AL.

Benefits of LRS Realignment

As shown, a significant list KSAs of overlapping both 21A and 21R AFSCs and their mission sets exist. Yet, while schoolhouses and staff offices bring the two AFSCs together, the operational wing organization has separated 21Rs in the LRS away from the rest of the 21X community currently in the Maintenance Group (to include other 21Rs in the Aerial Port Squadron). As Lynch & others (2005) found in Table 1, there was a strong perception from their survey that bringing all 21A officers under one group commander would improve officer training. This study argues the same would happen for bringing all 21As and 21Rs into the same group (name subject to change if necessary). This sentiment was reflected in

many opinions during field research stating the MXGs are conducting 21A officer training well and even tracking it using their full-time maintenance training flights; however, 21Rs struggle from base to base and boss to boss—if the LRS/CC is too busy, there is no other “adult supervision” making sure it’s getting done.

New training and education options for the newest Lieutenant right up to the Group Commander would also arise. For the Commander, a wider scope of responsibility would make him/her a better candidate for Air Force and Joint Staff positions that expect a Logistics Officer to show up prepared to do any Logistics task given. Like the Marine Corps Logistics Colonel, this 21A or 21R becomes much better suited to take on any Logistics assignment available as a true 20C0 (Logistics Commander). Within their ranks, the Group Commander can work their own crossflow program with officers showing great skill in their own core competencies who may benefit from broader experience in their future assignments. Likewise, with both AFSCs in one group, the pool of trainers (AMMOS and ALROC graduates) can be harnessed to shed light on KSAs the commander feels need work or are simply beneficial for the group’s officers.

It’s arguable too, that promotion opportunities would be better for 21Rs to take a group command amid a field of Logistics Officers vice competing with the myriad of AFSCs in the Mission Support Group. It is recommended that when the Group Commander is a Maintenance Officer, the deputy be a 21R (and vice versa). Finally, growing up formally organized alongside one-another will build a better team and well rounded logisticians. This adopts the goal of the Logistics Officer’s Association (a professional society that brings the two AFSCs together informally to further objectives of both) and reinforces it officially.

Deliberate Vectoring

deliberate (adjective): *characterized by or resulting from careful and thorough consideration*
(Merriam-Webster, 2013)

A Deliberate Continuum of Learning makes an underlying assumption; “You have to start by defining what you want to create,” according to one interviewee. “We have a career path pyramid, but we need more of a volcano model,” said another. One group using such a “volcano” concept to align officers with a particular track is the USAF pilot community. During undergraduate pilot training, each student learns the common fundamentals of flight in a T-6 aircraft and just before graduation is assigned to a specific track based on the needs of the Air Force and personal desires: T-38 (fighter/bomber), T-1 (Tanker/Airlift), C-130 (propeller) or UH-1 (rotary). The vast majority will spend the rest of their operational career in that track that was determined when they were typically Lieutenants.

A disparity in the results of Table 25 suggest a lack of both “Enterprise View” (or Breadth) *and* “Depth” could be addressed by assigning career tracks of 21As after foundational training in the primary disciplines of aircraft maintenance. Leaders expressed pains such as “I shouldn’t have been learning depot maintenance for the first time after being put in charge of an entire Air Logistics [Complex].” Much like the Marine officer who is first trained to lead a ground platoon of riflemen and spends the rest of their Logistics career with a keen sense of the needs in that primary war-fighting unit, Aircraft Maintenance Officers should begin with their careers in the operational wing. This is reinforced by finding a general distaste for 21A’s starting their careers elsewhere, specifically in Lifecycle Logistics billets, where a lieutenant had no experience from which to draw and fell behind his peers in development in RNI and Mission Generation positions (Chapter 4, IQ 2).

From this foundation as a CGO, a milestone such as selection to attend Maintenance Officer Intermediate Course, AMMOS or promotion to Major could be associated with assignment to a career track. Conveniently, the school time for the advised officer could be spent focused in on the lessons taught and papers written for their assigned track. Or, more similar to the pilot model, assignment to a track after graduation would motivate higher levels of performance while at school if their class placement was weighted in the selection process.

Two factors are needed to facilitate such a 21A tracking process. First, A4LF and the developmental team should establish the focal mission sets of each track and establish the desired number of senior officers to grow in each track. In turn, the number of CGOs needed in each track today could be calculated based on predicted attrition rates. This would define the needs of the Air Force. Second, the desires and actions of the individual should be considered. The Air Force currently pursues desires for follow-on assignments via the Officer Development Plan. This same tool can be used to express desired tracks to the developmental team.

Developmental teams could also use the track assignment milestone to incentivize pursuit of “desirable” master degree programs as supported by recommendations of senior leaders (Tables 12-13). Although the recommendation to pursue degrees in whatever a CGO wanted or liked was popular, it was often followed with the acceptance of reality that some CGOs had their sights set on a dream career outside of the Air Force that they could prepare for today. All military members should continue to have this option as a benefit of having served their country. However, desirable degrees given weight during track selection would most likely boost numbers of 21As obtaining them. As an aside, the AFOCD

recommends bachelor degrees but does not publish desirable Master's degree programs for logistics officers. Therefore, it is recommended the programs from Table 12 be added to the education paragraph (3.2) for 21A, 21M and 21R AFSCs in the AFOCD (Appendix A). Because the request for information during Office Question 2 asked interviewees to consider all 21X officers while answering, all mission sets and all proposed tracks in the next section of this chapter would benefit from the following programs: Logistics Management, MBA, SCM, or a degree from AFIT.

What should the tracks be? Chapter 4 results support RNI, Mission Generation, Lifecycle Logistics and Joint Logistics as distinct but overlapping mission sets all executed by 21As; therefore, KSAs of principal importance within these mission sets provide insight to shaping the proposed tracks. Figure 9 models how proposed tracks overlap one another, while Figures 10 and 11 pair up other AFSCs and services likely in same track. Career Maintenance Officers should be experts of KSAs unique to mission generation and those who only overlap Mission Generation and RNI. Air Force Materiel Managers have Lifecycle Logistics KSAs and those that overlap only between LCL and RNI as their track's compass. Finally, the Joint Logistician is uniquely interested in those KSAs nominated as strongest only in the Joint Logistics mission set and supplemented with experiences with the Air Force's non-logistics officers executing the missions identified by IQ7's DoDOCC gap analysis.

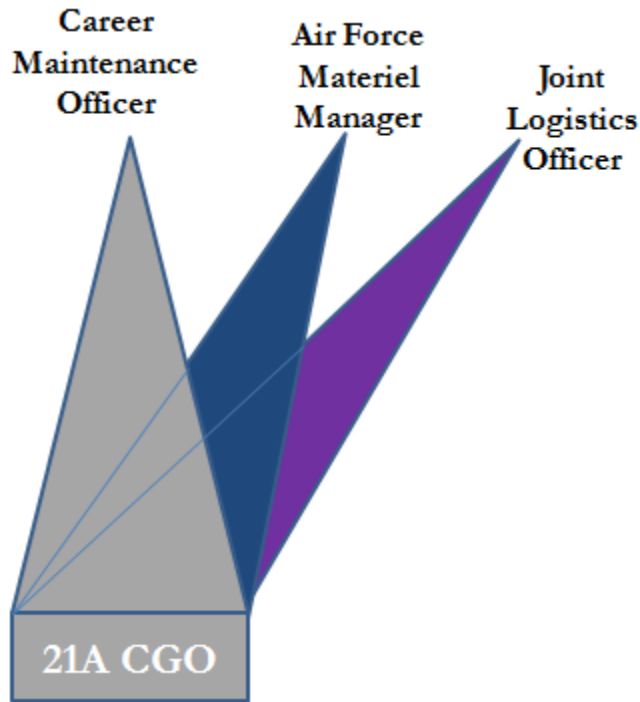


Figure 9: 21A Deliberate Vectoring Model

Career Maintenance Officer

Table 25's demand for "Depth" came from 21R interviews and is absent from 21A/M responses (Table 26); this leaves the perception that Maintainers are not struggling here and should retain this tactical-level strength into the future. Further driving this point, a want for the depth that 21A's enjoy was often a counter for their need to develop more functional experts. This core vector will ensure the USAF continues to produce "PhD's in Maintenance" (Webb, 2002). KSAs to drive deeply into these officers belong to both of the missions they would serve; Mission Generation and intermediate-level RNI. High Occurrence KSAs shared uniquely between or specific to these mission sets are:

- Analysis
- Flying Hour Program
- Leadership

- Production Management
- Safety
- Scheduling
- Supply Chain Management
- Weapons System Knowledge

This track would be tasked heavily with commanding large numbers of uniformed, fielded Air Force maintainers and all untracked CGOs.

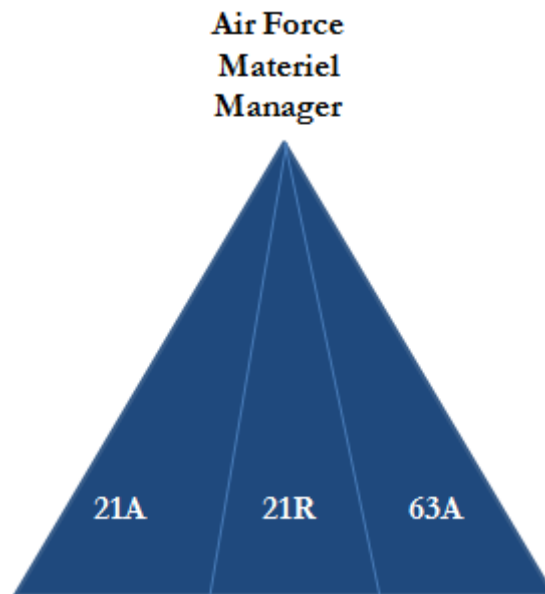


Figure 10: Proposed AFSCs in the Air Force Materiel Manager Track

Air Force Materiel Managers

“We are in a business, so we need to start making more businessmen!” This interviewee along with many others pushed a need for “Enterprise Wide View” to the top of both the full participants list and 21A/M participant list of KSAs 21X officers currently lack (Tables 25, 26). The logistics enterprise within the Air Force has been highly concentrated as of late into Air Force Materiel Command’s Air Force Sustainment Center and Lifecycle Logistics Center. The 21A mission sets of particular interest to these centers are Lifecycle Logistics and RNI. KSAs highly occurring between or specific to these two include:

- Acquisitions
- Asset Management
- Contracting
- Disposition
- Funding

- Sourcing

21As selected for the Air Force Materiel Manager track would also encounter a greater need for the overlapping KSAs reported with other AFSCs who play major roles in these centers (Table 24). As depicted by Figure 10, 21R and 63A (Acquisitions Manager) AFSCs should be companions in this same track's pyramid. So, the 21As in this track would be excellent candidates for the AFIT's Logistics and SCM Graduate Degree Program, the Logistics Career Broadening Program (LCBP) and Acquisition and Logistics Experience Exchange Tour (ALEET) soon after track selection. Retention of officers in jobs likely to utilize the skills gained from these career broadening programs would be a significant improvement over the current state. Many interviewees complained that both AFIT degrees and LCBP graduates were being underutilized. Advanced Academic Degree (AAD) coded billets would go unfilled while graduates would go off to operational assignments. Similarly, LCBP graduates were assigned likewise to operational assignments; there was even a perceived trend of many LCBP graduates being disproportionately prior enlisted and retiring soon after the program; again, not making a return on investment.

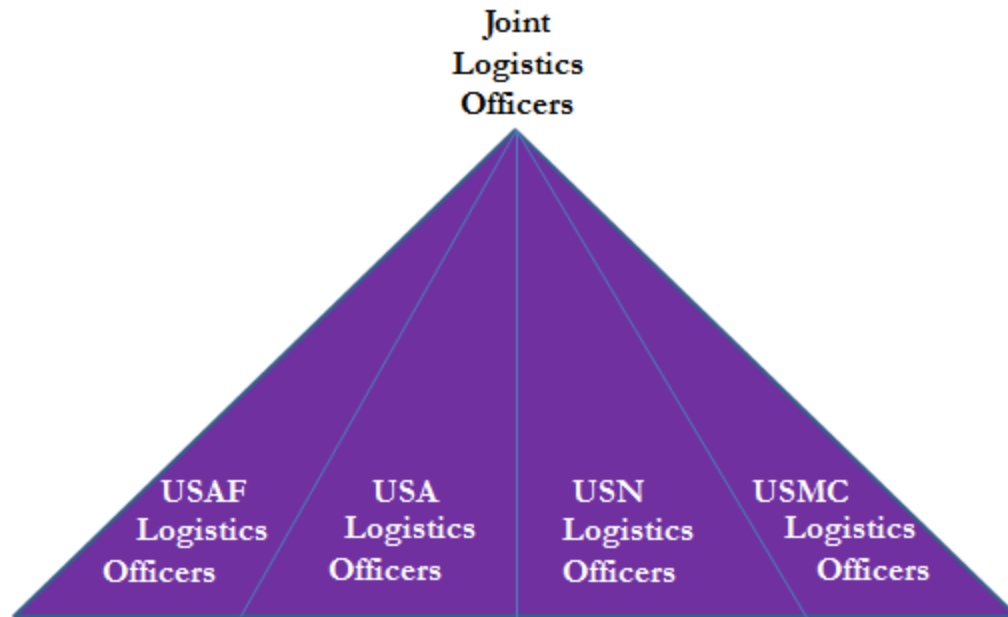


Figure 11 : Members of Joint Logistics Track

Joint Logistics Officers

Two reasons were offered as to why 21As may not be attractive nominees or well suited to direct J4 staffs. First, as a response to the Goldwater-Nichols Act (1986), the DoD instituted a requirement for any officer promoted to flag officer ranks to have served in at least one joint billet before promotion. Yet, this requirement is waiverable for officers in acknowledged “scientific or technical” specialties, of which Aviation Maintenance is one (Undersecretary of Defense for Personnel & Readiness, 2010; 44-45). The argument favoring this exemption is that few (or no) joint opportunities existed for these unique career fields. In turn, 21As were not filling, qualified for, or generally pursuing joint billets. Interviewees also explained that general officers are typically hand-picked by superiors with whom they have worked in the past. So, the implication is if 21As aren’t filling roles in the Joint Fight earlier in their careers, who in the joint world will be in their corner to select or nominate them? The second point of contention from interviews argued 21As and 21Rs alike are not as qualified as other services logisticians; the Air Force scope of logistics is too

small. This lead to the addition of IQ7 to this study, whose results compare Logistics Officers' DoD Occupation Codes across services (Table 37). When compared to other members of the greater Logistics Officers' Corps, 21As have a lot of ground to cover outside of their core mission sets to be considered capable of directing such an array of Logistics functions. This study's field research suggests high occurrence KSAs unique to the Joint Logistics Track are:

- Classes of Supply
- International Logistics
- Plans Management
- Service Culture/Org Capabilities
- Sister Service Interoperability

Additionally, this track should intentionally provide opportunities for career broadening tour similar to the current LCBP or ALEET programs to include short experiences within the Air Force alongside the following AFSCs:

- Combat Control (13D—logistics functions only)
- Force Support (38F—services functions only)
- Acquisition Manager (63A)/Contracting (64C)
- Audit/Finance/Cost Officers (65A/65F/65W)

Possible avenues of giving 21As more joint exposure should be pursued. Early track selection would enable a handful of officers to be heavily involved with sister service Aircraft Intermediate Depots, gain greater exposure to the traditionally 21R mission sets of Deployment, Distribution and Supply Management. A grasp of broader logistics missions served through as financial accounting, contracting, food services, billeting, medical logistics

and combat control would also make 21As more aware of Joint Logistics needs. After track selection, these relatively few officers could attend the Army Logistics University's Joint Logistics Course (ALU/JLC) and the Army's Combined Logistics Captains Career Course (CLC3) with sister service Logistics Officer counterparts. These schools reported low and zero attendance of Air Force Logistics Officers, yet the Supply Corps Officers of the Navy and Army and Marine Logistics Officers are regulars at ALU/JLC; the Marine's even list attendance at the CLC3 as a career progression step for their logistics officers development (Appendix D). The joke that Joint is actually spelled "A-R-M-Y" was common among interviewees, but as discussed, the Army is funding joint education and training efforts the USAF is not attending. Furthermore, 21As tracked as Joint Logistics Officers could attend one Joint PME if not two (which has historically been discouraged). If both PME courses attended were non-Air Force schools, it's recommended that Intermediate and Senior Developmental Education be accomplished with different sister services. Their "career broadening assignments" would need to be many with recommendations for Joint Billets in the combatant commands, DLA, and more operational assignments to Joint Bases where efficiencies between services repair capabilities could be sought out by these Joint Logistics tracked officers. Figure 9 appropriately shows this vector as the greatest skew away from the vertical 21A core track of a Career Maintenance Officer.

Future Research Opportunities

This study was thought provoking every day, making it difficult to scope. Having to end somewhere, there are several areas of future research recommended.

First, to better analyze the results of this study, a follow-on study using the Parent KSAs in a survey form should be sent out to the 21X population to quantitatively establish

strength of needs as well as when (at what rank) each KSA is needed. Such a study will bring the Air Force one step closer to the HCS vision of rating logistics experience across services in order to best requisition joint billets. Thereafter, the results of such a study can be incorporated into future OAR surveys of both 21A and 21R AFSCs to longitudinally track increases and decreases in need of particular KSAs.

To better flesh-out the recommendation to realign the LRS under a common group with all other 21X officers, a study should compare 21R KSAs to other AFSCs within the Mission Support Group. Findings can be compared to those of this study to counter or support the realignment argument.

For the benefit of better stewardship of taxpayer dollars and increased opportunities for 21As to work jointly, a study of Intermediate and Depot repair of engines and other similar aircraft components should be done to assess opportunities for efficiencies in production at the Joint Logistics level.

With hopes of increasing focused learning at ACSC and Air War College, options to incorporate Joint Logistics electives should be researched to best develop 21X students and be available to the many customers of the logistics machine in other officer communities. Researchers interested should seek sponsorship through the National Defense University's Center for Joint and Strategic Logistics.

Though this study proposes one recommendation for collocating AMMOS and ALROC, this initiative deserves a focused research effort of its own to be most effective and examine the many variables to consider.

Finally, an analysis of biographies and duty histories for those officers who have directed J4 staffs may yield more insights that will help create Air Force Logistics Officers more capable of filling the Joint Logistics position of leadership.

Conclusions

Answering the IQs of this study offered insight to solving the problem of creating a Deliberate Continuum of Learning. It seems the USAF needs Aircraft Maintenance Officers who are able to serve in their primary role as Career Maintenance Officers, to serve as more general Air Force Materiel Managers and also to serve as capable Joint Logistics Officers. To prepare them, the 21A Career Field Manager can utilize the significant overlaps identified between the KSAs required by 21A and 21R officers from this study.

For the sake of established direction and efficiency of funds, the 21X community should consolidate courses where appropriate. Also, embracing some form of a deliberate vectoring process as described above would bring clarity for officers and supervisors alike. Last, aligning all 21X organizations into the same group at the operational wing presents opportunities to develop these common KSAs outside of the classroom.

As the US Government heads into fiscal uncertainty the KSAs laid out in this study for Aircraft Maintenance Officers should serve as brighter beacons on the way to desired waypoints. Yet, it is hoped these maps will not just help 21As through coming budget storm, but also make them officers better prepared to lead the logistics war-machine into battle. If you've read this far ... good luck out there!

Appendix A. Air Force Logistics Officer Descriptions

AFOCD, 31 January 2012



31 January 2012

AIR FORCE OFFICER CLASSIFICATION DIRECTORY (AFOCD)

**The Official Guide to the
Air Force
Officer Classification Codes**

**A Specialty for Every Air Force Job
and
The Qualifications Necessary to Perform Each Job**

OPR: HQ AFPC/DPSIDC
Supersedes AFOCD 31 October 2011

Certified by: HQ AFPC/DPS

LOGISTICS CAREER AREA (2XXX)

Introduction

The Logistics Career Area encompasses program formulation, policy planning, coordination, inspection, command and direction, and supervision and technical responsibilities pertaining to space and missile maintenance, aircraft maintenance and munitions, transportation, supply, and logistics plans and programs utilization fields.

The Logistics Commander directs and monitors logistics programs including supply, transportation, procurement, and maintenance activities; and serves as senior staff advisor to commanders. The following is a complete listing of AFSCs for the Logistics Career Area.

AFSC 20C0

LOGISTICS COMMANDER

1. Specialty Summary. Directs and monitors logistics programs including supply, transportation, procurement, and maintenance activities; and serves as senior staff advisor to commanders. Related DoD Occupational Group: 280100.

2. Duties and Responsibilities:

2.1. Directs and organizes logistics programs. Reviews logistics requirements for specific objectives and priorities of command mission. Directs preparation of plans for logistics support of tactical, strategic, and defense missions. Plans research projects to determine effectiveness of logistics support programs. Plans and establishes logistics policies and procedures; exercises staff supervision over logistics activities to assure logistics support of Air Force mission requirements. Provides for applied research in areas of technological development, recommending modification of existing equipment and outlining need for developing new equipment. Reviews operation operating budget requirements of logistics activities and directs consolidation of logistics budget. Reviews applicable stock fund operating programs, and where appropriate, directs their consolidation.

2.2. Monitors logistics activities. Analyzes logistics requirements and estimates capabilities of organization to accomplish assigned missions. Approves fund expenditures for supplies and equipment. Inspects operating condition of facilities and effectiveness of logistics activities to support logistics programs and ensure coordination between such activities. Evaluates logistics programs, establishes responsibilities, estimates trends, and projects requirements and capabilities of activities such as supply, maintenance, transportation, and procurement. Prepares technical publications on logistics methods, procedures, and policies. Directs operation of maintenance and supply organizations.

2.3. Coordinates logistics programs. Advises commanders on status of logistics programs and ability to meet current and projected requirements. Coordinates with civil engineering personnel, operations directors, and comptrollers in preparation of master command plan and in outlining areas of responsibility to avoid duplication of functions. Confers with commanders and staff on activities such as maintenance, supply, transportation, and procurement to establish and implement logistics programs, policies, and procedures. Coordinates with comptroller activities in projecting budget requirements and allocating funds to logistics programs. Maintains liaison with research and development activities, military services, and public and private agencies on logistics changes.

3. Specialty Qualifications:

3.1. Knowledge. Knowledge is mandatory of: supply, procurement, maintenance control, production management, and logistics planning.

3.2. Education. For entry into this specialty, undergraduate academic specialization in logistics management, engineering, or business is desirable.

3.3. Training. Not used.

3.4. Experience. For award of AFSC 20C0, the following experience is mandatory:

3.4.1. Qualification in a staff officer specialty in one or more utilization fields in the Logistics Career Area, or in a staff officer specialty in the Communications-Computer Systems Career Area.

3.4.2. Also, experience formulating plans and policies for, and monitoring logistics programs, with emphasis on requirements determination; and operating procedures, systems, and policies requiring a factual understanding of all phases of logistics.

3.5. Other.

3.5.1. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSC 20C0, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management* is mandatory.

LOGISTICS UTILIZATION FIELD (21XX)

Introduction (Changed 31 Oct 09)

The Logistics utilization field encompasses all functions performed by logistics officers, including aircraft, missile, and spacelift maintenance; supply; transportation; and logistics plans. Inherently included are program formulation, policy planning, coordination, inspection, command and direction, and supervision.

★The Logistics Readiness specialty (AFSC 21RX) encompasses integration of logistics disciplines at the senior level for transportation, supply, and logistics plans. Responsibilities include directing integrated logistics processes; accomplishing joint logistics planning for warfighting support and sustainment with the Joint Staff, Unified Commands, other military services and agencies of the Office of the Secretary of Defense; and directing acquisition and wholesale logistics activities.

The Aircraft Maintenance specialty (21AX) encompasses functions of production management, quality control, and direction of aircraft maintenance, avionics, and munitions activities. Responsibilities include immediate supervisory and technical responsibilities for removing, installing, modifying, calibrating, repairing, and storing of aircraft, avionics, and munitions equipment and components. Equipment and components include aircraft engines, airframes, accessories, instruments, and aerospace ground equipment; aircraft systems and equipment. Responsibilities may also include maintenance and management of nuclear, explosive, toxic, chemical-biological, and incendiary aerospace munitions.

The Munitions and Missile Maintenance specialty (AFSC 21MX) encompasses missile maintenance, production management, quality control, and direction of maintenance activities. Responsibilities include procedures for missile technicians; facility requirements; system hardware designs; technical responsibilities for assembly, installation, checkout, component replacement, modification, repair, testing, inspection, calibration, and systems analysis of equipment; and command, preset, and automatic guidance systems, missile test equipment, and systems components.

AFSC 21A4, Staff
AFSC 21A3, Qualified
AFSC 21A1, Entry

AIRCRAFT MAINTENANCE (Changed 1 Aug 09)

1. Specialty Summary. Leads, trains, and equips personnel supporting aerospace equipment sustainment and operations. Manages maintenance and modification of aircraft and associated equipment. Administers aircraft maintenance programs and resources. Directs aircraft maintenance production, staff activity, and related materiel programs. Assesses unit capability and advises senior leadership. Related DoD Occupational Groups: 240400.

2. Duties and Responsibilities:

★2.1. Directs aircraft maintenance mission generation and repair network activities. Maintains workforce discipline and responds to personnel issues while balancing workforce availability and skill levels with operational requirements. Works with functional managers to develop, formulate, and manage fiscal resources. Instills maintenance discipline, security awareness and force protection concepts. Ensures accuracy of documentation, i.e. aircraft forms and automated systems. Ensures adherence to technical data, policy, procedures, and safe maintenance practices.

2.2. Develops, coordinates, and executes flying and maintenance schedules. Manages aircraft configuration; daily aircraft servicing, weapons loading, launch, recovery, and repair; periodic aircraft maintenance inspections; and flightline safety and foreign object damage (FOD) prevention and dropped object programs. Manages overall aircraft fleet health and ensures aircraft availability to execute mission requirements. Analyzes aircraft maintenance indicators to identify trends and initiates corrective actions.

★2.3. Directs maintenance activities that may include aircraft propulsion, pneumatics, egress, fuel systems, electro-environmental, Precision Measurement Equipment Laboratory (PMEL) and avionic systems. Also may include management of aerospace ground equipment, structural repair, low-observable repair, corrosion control, machine, welding, inspection, aero-repair, crash, damaged, disabled aircraft recovery, non-destructive inspection, and off-equipment munitions and armament suspension equipment.

2.4. Manages quality assurance, maintenance training, budget and resource management, analysis, facilities, shared resources to include end-of-runway and weapons load training. Manages plans and programs, modifications, and modernizations requirements.

2.5. Formulates maintenance plans and policies to meet unit tasking. Assesses unit maintenance capability in support of combat related operational plans and provides inputs for capability assessments for each plan. Defines aircraft maintenance procedures and requirements in response to emergency or contingency situations.

2.6. Coordinates key core logistics requirements supporting aircraft maintenance operations. Establishes support requirements for supply requisition, repair cycle, delivery, combat support, ground and aerial port transportation, base support plans, and munitions requirements.

★2.7. Directs and manages wholesale logistics life cycle sustainment support. Coordinates production schedules to include induction and selling systems. Defines technical problems and economic factors related to research and development, and system operational data to evaluate programs, assess trends, and identify improvements and deficiencies. Manages weapons system programs, funding of depot maintenance workloads, and transportation distribution systems. Manages logistics tests and evaluation on new acquisition programs and aircraft modifications.

3. Specialty Qualifications:

★3.1. Knowledge. The following knowledge is mandatory for award of the AFSC: maintenance and personnel management procedures, and organizational and mission requirements; capabilities, limitations, and basic operating principles of aircraft systems and components; theory of flight and airframe construction; life cycle sustainment, quality assurance; supply, transportation, logistics plans, contracting, flying operations, munitions, and other unit operations related to aircraft maintenance units.

3.2. Education. For entry into this AFSC, an undergraduate academic degree in management, engineering, industrial management, business management, logistics management, or physical sciences is desirable.

3.3. Training. For award of the 21A3, completion of an AETC in-residence Aircraft Maintenance Officer Course (AMOC) is mandatory.

3.4. Experience. For award of AFSC 21A3, a minimum of 24 months of experience managing aircraft maintenance activities is mandatory.

3.5. Other. Not used.

AFSC 21M4, Staff
AFSC 21M3*, Qualified
AFSC 21M1*, Entry

MUNITIONS AND MISSILE MAINTENANCE (Changed 30 Apr 09)

★1. Specialty Summary. Manages maintenance and modification of conventional munitions, nuclear weapons, Intercontinental Ballistic Missiles (ICBM), and associated equipment. Administers weapons programs and resources. Directs weapons maintenance production, staff activity, and related material programs. Manages missile maintenance activities at launch and missile alert facilities, including maintenance, repair, and inspection of missile flight systems, expendable launch vehicles (ELV), nuclear certified support vehicles and equipment, and associated ground support equipment (SE). Serves as munitions and missile maintenance staff advisor to commanders. Related DoD Occupational Groups: 240500.

2. Duties and Responsibilities:

- 2.1. Formulates maintenance procedures for all munitions and missile systems. Builds integrated logistics support plans and develops maintenance support structures to sustain maintenance and personnel. Manages storage and distribution of Air Force munitions. Establishes training requirements and support standards of operational systems. Identifies and upgrades system deficiencies to meet mission requirements and enhance safety.
- 2.2. Assesses operational requirements and environment. Advises commanders on risks associated with conventional munitions, nuclear weapons, and missile operations. Evaluates explosives and nuclear safety criteria and develops explosives site plans for storage, movement, and operations of conventional munitions, nuclear weapons, and missiles. Conducts conventional munitions, nuclear weapons, and missile safety training.
- 2.3. Manages conventional munitions, nuclear weapons, and missile maintenance production. Recommends procedural and technical improvements and modifications. Schedules resources to ensure required readiness. Enforces technical performance standards, and ensures assigned work force is properly trained and equipped. Assesses unit capability and advises commanders, supervisors, and staff. Budgets and allocates resources. Coordinates with operational and support units to ensure equipment readiness and efficiency of assigned forces.
- 2.4. Formulates maintenance plans. Plans and programs support requirements, modifications, and modernization. Defines technical problems and economic factors related to research and development, and system application. Reviews maintenance and operational data to evaluate programs, assess trends, and identify improvements and deficiencies.
- 2.5. Plans and directs munitions support for in-place and Air Expeditionary Force operations.
- 2.6. Plans and organizes munitions and missile maintenance activities. Performs engineering functions for maintenance and operations facilities; provides space, tools, test equipment, and spare parts; establishes workflow. Develops and improves methods and procedures for assembly, checkout, calibration, and analysis of aerospace systems. Establishes performance standards for system assembly, checkout, and component replacement. Plans and coordinates booster flight profiles. Manages qualifications and validation of ELVs, including engineering proposals, hardware, and software procurement. Certifies launch readiness of flight hardware, associated facilities, and supporting test range resources. Directs DoD and civilian agencies and aerospace contractors throughout launch preparation activities.
- 2.7. Manages and coordinates activities to support intercontinental ballistic missile (ICBM) launch readiness operations. Advises commander on operational status of ICBM assets. Maintains liaison with manufacturers' representatives to solve maintenance and performance problems. Coordinates lateral logistics activities to ensure supply, transport, and funding are integrated to support mission requirements. Develops flight plans and supports ground flight software and hardware configuration. Monitors operation and performance of vehicle activities and flight dynamics. Represents logistics in development of flight procedures, mission checklists, and mission flight rules.
- 2.8. Writes munitions, nuclear weapon, and missile maintenance annexes to logistics plans. Provides weapon system data for operational and logistics support analysis. Monitors and evaluates contracted logistics and maintenance support activities.
- 2.9. Develops procedures for storing, assembling, delivering, inventory management, and testing conventional munitions, nuclear weapons, and missiles.
- 2.10. Develops procedures for, and manages, routine disposal of common US munitions.
- 2.11. Develops munitions accountability programs. Understands and manages all aspects of the Air Force munitions accountability system.

★3. Specialty Qualifications:

3.1. Knowledge. The following knowledge is mandatory for award of the AFSC indicated:

3.1.1. 21M3A. Maintenance management procedures and organizational and mission requirements; capabilities, limitations, and basic weapons, weapons procedures, and quality assurance; supply, transportation, civil engineer, and other unit operations related to munitions, missile, or aircraft maintenance units; conventional air-to-air missiles; air-to-ground weapons including guided, rocket-boosted, and unguided munitions; dispensers and submunitions; suspension and release equipment; fuses; wiring harnesses; loading procedures; safety tests; munitions (ground) handling equipment; maintenance management; production control and maintenance data collection procedures; and lateral logistic functions related to munitions maintenance.

3.1.2. 21M3I. Missile and re-entry systems; suspension and release equipment; weapon employment; nuclear surety; joint nuclear procedures; related test, handling, and SE; evolution of missiles; missile operations including booster and payload processing; solid and liquid rocket performance, maintenance capabilities, limitations, and employment of missile equipment; and ICBM life cycle logistics.

3.1.3. 21M3N. Nuclear weapons and warheads; nuclear armament systems; suspension and release equipment; nuclear weapons employment; Munitions Accountable Systems Officer responsibilities; nuclear weapons maintenance, life cycle management, and inspections; nuclear surety; nuclear theory, effects, and components; nuclear weapons storage; nuclear weapons movement; nuclear weapons physical security; nuclear weapons transportation; nuclear weapons maintenance documentation, records and reports; and joint nuclear procedures.

3.2. Education. For entry into this specialty, an undergraduate academic degree in management, business administration, economics, mathematics, science, engineering, computer science, logistics management, or space operations is desirable.

3.3. Training. The following training is mandatory for award of the AFSC indicated:

3.3.1. 21M1. Completion of the Munitions and Missile Maintenance Officer Fundamentals Course and Nuclear Fundamentals Course is mandatory and a prerequisite for attending specialty shredout courses.

3.3.2. 21M1A. Completion of Conventional Munitions Officer Course.

3.3.3. 21M1I. Completion of Missile Maintenance Officer Course.

3.3.4. 21M1N. Completion of Nuclear Maintenance Officer Course.

3.4. Experience. The following experience is mandatory for award of the AFSC specialty shredout indicated:

3.4.1. 21M3A. A minimum of 24 months experience managing conventional munitions maintenance activities are mandatory.

3.4.2. 21M3I. A minimum of 24 months experience managing ICBM maintenance activities are mandatory.

3.4.3. 21M3N. A minimum of 24 months experience managing nuclear weapons maintenance activities and completion of Career Field Education and Training Plan requirements are mandatory. Completion of Nuclear Accountability Course is required within 24 months of assignment.

3.5. Other. Specialty requires routine access to Top Secret material or similar environment. For award and retention of AFSCs 21MXX, completion of a current Single Scope Background Investigation (SSBI) according to AFI 31-501, *Personnel Security Program Management* is mandatory.

NOTE: Award of the entry level without a completed SSBI is authorized provided an interim Top Secret security clearance has been granted according to AFI 31-501.

★4. *Specialty Shredouts:

<i>Suffix</i>	<i>Portion of AFS to Which Related</i>
A.....	Conventional
I.....	ICBM
N.....	Nuclear

AFSC 21R4, Staff
AFSC 21R3, Qualified
AFSC 21R1, Entry

LOGISTICS READINESS (Changed 31 Oct 09)

★1. Specialty Summary. Integrates the spectrum of the logistics processes within the operational, acquisition, and wholesale environments. The major logistics processes include distribution management, materiel management and contingency operations. Directs and manages distribution management, materiel management, contingency operations, fuels management, aerial port operations, vehicle management, and acquisition/life cycle logistics management. Plans and programs logistics support for wartime requirements. Related DoD Occupational Group: 280100.

★2. Duties and Responsibilities:

2.1. Directs distribution management operations to include managing cargo distribution functions such as receiving, inspecting, tracing, tracking, packaging, and shipping of supplies, equipment and war readiness spares. Responsible for logistics pipeline management and time-sensitive delivery of materiel in support of peace, contingency, and wartime operations. Maintains accountability for supplies and equipment. Responsible for the safe and efficient organic ground transportation of personnel and cargo within and between installations in support of daily and contingency operations. Resolves problems related to storage, safety, and fire hazards. Manages storage space utilization and develops and maintains a storage facility and mechanized material handling equipment modernization program to include maintenance, future upgrades, and working stock requirements. Determines readiness requirements, including emergency supply support plans, tactical and strategic movement of personnel, materiel, and units. Schedules and coordinates movement of cargo, personnel, and personal property by commercial or military modes using systems which interface with defense total asset visibility systems. Uses in-transit visibility systems. Maintains liaison with US Transportation Command (USTRANSCOM), other services and federal agencies to schedule and coordinate movements of cargo and personnel. Ensures proper allocation and effective use of transportation resources. Establishes and administers an effective packaging and preservation program. Evaluates movement forecasts and flow of personnel and cargo into the transportation system, movement capabilities, and efficiency of modes used.

2.2. Directs materiel management operations such as, direction and management of retail or wholesale supply activities. Included are environmental compliance and inventory management. Determines, computes, and analyzes current and projected materiel requirements; applies authorizations and allowances; establishes and maintains stock levels; manages asset positioning; inspects, reviews, and evaluates work methods and procedures. Ensures accountability is maintained for supplies, equipment, and War Reserve Materiel (WRM). Determines effectiveness of functional data systems. Manages assigned information systems and applies approved standards and criteria to ensure proper implementation, operation, and results. Develops plans, programs, policies and procedures to manage materiel management activities, including systems design and analysis, determination and computation of requirements, plans for activation and inactivation, facility requirements, equipment allowances, and materiel accounting. Develops working capital fund operating programs and determines operating budget. Provides guidance on handling of readiness materiel stocks, including location, type of storage, protection, security, and quality control.

2.3. Directs contingency operations such as logistics planning, deployment command and control, Logistics Readiness Centers, logistics command and control, Combat Support Center activities, deployment, bed-down, and redeployment activities. Integrates Agile Combat Support planning efforts, conducts readiness assessment of logistics activities, conducts war and contingency planning, base support and expeditionary site planning, WRM management, support agreement management, manages logistics time phased force deployment data and unit type codes. Enables international theater security cooperation and interoperability, operating in coalition or Joint environments often working with contractors, host-nations, etc.

2.4. Directs fuels management operations such as environmental compliance, inventory management of ground and aviation fuels. Determines provisions, computes and analyzes current and projected petroleum requirements; computes, establishes, and maintains stock levels, manages fuel receipt from pipelines, trucks, rail cars, and marine vessels. Manages fuel dispensing systems, bulk fuel storage facilities, cryogenics productions and storage, and test and evaluation of fuel samples. Develops, plans and establishes policies and procedures to manage fuels activities, including systems design, plans for activation and inactivation, facility requirements, equipment allowances, and accounting. Interprets fuels directives. Inspects, reviews, and evaluates work methods and procedures. Resolves problems related to storage, fire hazards, and truck fill stand and aircraft refueling areas. Coordinates with commander, staff, and operating units on wartime, contingency and peacetime fuels support. Coordinates with elements of DoD and other governmental organizations to assure support to Air Force units.

2.5. Directs aerial port operations such as management of fixed and mobile air terminals through various sub-processes to include: Fleet Services, Aerial Delivery, Passenger Terminals, Freight, and the Air Terminal Operations. Coordinates

contingency transportation support requirements and capabilities with other agencies using DoD and USAF logistics, transportation and In-Transit Visibility (ITV) systems. Coordinates military and commercial aircraft schedules with appropriate control and operations centers and flight line agencies using current DoD and USAF logistics, transportation and ITV systems. Evaluates movement forecast and flow of personnel and cargo into the most efficient mode of the Defense Transportation System. Collects and analyzes data on air transportation.

2.6. Directs vehicle management operations such as coordination of vehicle and equipment requirements, assignments, priorities and warranty repairs. Evaluates quality of operator care and maintenance. Determines operational requirements and specifications including reliability, maintainability and standardization for facilities, vehicles and materiel handling equipment. Develops policies and procedures for the administration of vehicle abuse and misuse programs. Collects and analyzes data on vehicle operations and maintenance.

2.7. Directs acquisition/life cycle logistics activities. Plans for and manages systems, subsystems, and equipment throughout their life cycle, including integrated logistics support activities and modernization/obsolescence planning. Develops, initiates, integrates, and manages all logistics actions associated with life cycle management of weapon systems, subsystems, and equipment. Serves as logistics focal point throughout the system's life cycle. Formulates logistics management and fiscal policy for weapon systems.

★3. Specialty Qualifications:

3.1. Knowledge. Knowledge is mandatory of the following core competencies: Distribution Management, Materiel Management, and Contingency Operations. A Logistics Readiness Officer must have a well developed knowledge of all three core competencies and a well grounded understanding of the six proficiencies: distribution management, materiel management, fuels management, contingency operations, aerial port operations, and vehicle management.

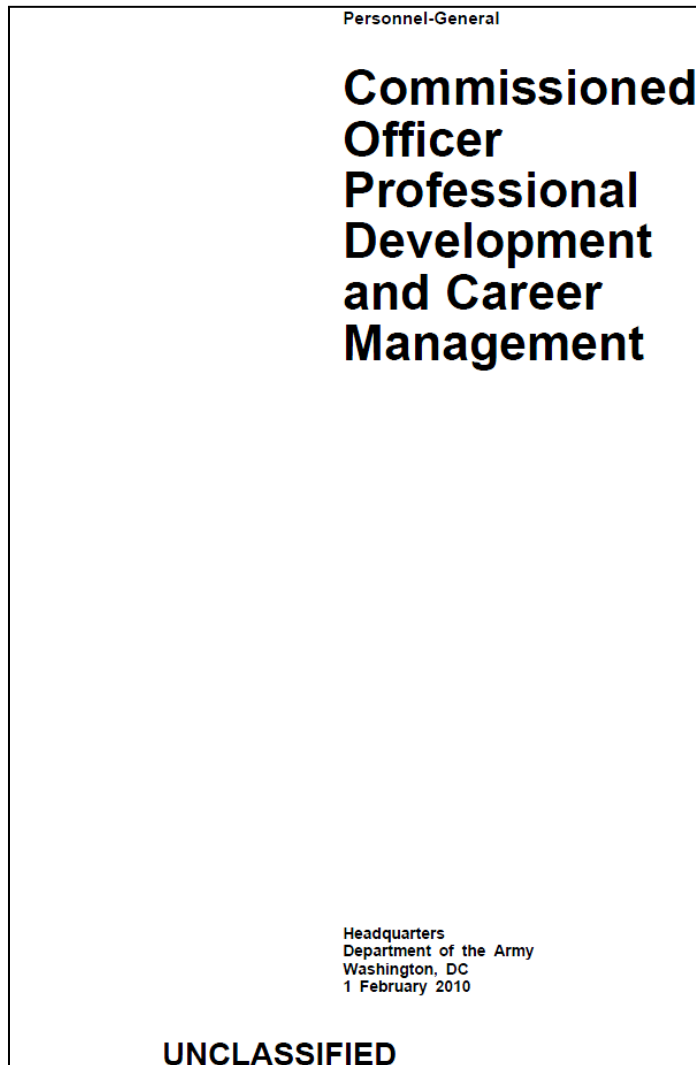
3.2. Education. For entry into this specialty, undergraduate academic specialization in logistics management, economics, management, business administration, computer science, information management systems, finance, accounting, petroleum engineering, chemical engineering, or industrial management is desirable.

3.3. Training. For award of AFSC 21R3, completion of Logistics Readiness Officer basic course (L3OBR21R1) and at least one core competency is mandatory.

3.4. Experience. For award of AFSC 21R3, the officer must gain 24 months experience in any Logistics Readiness function, with no less than 12 continuous months in one of the following competencies: Materiel Management, Contingency Operations, or Distribution Management.

NOTE: For ARC officers, the MAJCOM A4 may extend the required completion date when the officer cannot gain experience due to the limitations in training availability or opportunities.

Appendix B. Army Logistics Officer Descriptions



Part Four Force Sustainment

Chapter 35 Logistics Corps Officer Branches

35-1. Introduction to the Logistics Corps

The Logistics Corps consists of Soldiers (officers, warrant officers, and enlisted) in the historical Quartermaster, Ordnance, and Transportation regiments, as well as the new multifunctional Logistics branch, and the civilians who work in the various logistics career fields. The technical skills of our enlisted Soldiers, noncommissioned officers, warrant officers, and lieutenants remain consistent with the transformed Army and the continued need for functional expertise. This chapter explains how logistics officers are accessed, assigned, and professionally developed, as well as describes the skills, knowledge, and attributes needed for officers to succeed in today's Army as versatile logistics leaders.

a. History and background. Army logistics dates back to the early days of the American Revolution with the establishment of the Quartermaster Department in June 1775. The Ordnance Department followed during the War of 1812. World War II saw the creation of the Transportation Corps in July 1942. These three branches, and their

supporting civilians, have long, distinguished records of superior service and are vital components of the total Army force structure. In 1993, FA 90 was created within the Operations Career Field in order to support the development of multifunctional logisticians. Since then, the FA 90 designation has been used to signify officers skilled across the functional logistics branches. In 2005, as part of an OPMS review, an effort was undertaken to examine how to further advance the notion of multifunctional logistics leaders. The result was the creation of a Logistics branch for officers in the grade of captain through colonel and the formal recognition of a "Logistics Officer Corps" as approved by the Army Chief of Staff in May 2006. The Logistics branch official establishment date was 1 January 2008.

b. Logistics Officer Corps concept. "Logistics Officer Corps" is the term used to describe all officers (commissioned and warrant) who hold a branch or MOS within the Logistics Corps. Commissioned officers accessed as lieutenants into one of the three Logistics Corps functional branches (Ordnance, Quartermaster, Transportation) will develop these functional branch skills for the first 3-4 years of their careers. Upon promotion to captain and successful completion of the Combined Logistics Captain Career Course (CLC3), officers will be inducted into the Logistics branch. Their original functional branch (Ordnance, Quartermaster, or Transportation) will become the secondary area of concentration (AOC) and will qualify them for those types of functional assignments. Logistics knowledge, expertise and development have primacy over individual skills within the Ordnance, Quartermaster and Transportation fields. As the Logistics Corps technical experts, warrant officers will only have functional specialties. All four Logistics Corps officer branches are in the force sustainment functional category. *EOD officers will hold 89E as their primary AOC and 91A as their secondary AOC until revocation of their volunteer statement.

c. Chapter organization. This chapter is organized into an introductory section and four branch sections. The Commanding General, U.S. Army Combined Arms Support Command (CASCOM) is the proponent for this chapter and the Logistics branch section. The Ordnance, Quartermaster, and Transportation branch proponents are responsible for their particular sections within this chapter.

35-2. Logistics Branch

a. Purpose. Logistics branch officers plan, integrate, and direct all types of sustainment activities in order to operate effectively on the modern battlefield enabling Army forces to initiate and sustain full spectrum operations. The nature of warfare in the 21st century operating environment mandates that Logistics branch officers maintain competence in all facets of logistics; therefore, the Logistics branch merges Ordnance, Quartermaster and Transportation basic branch officers into one unified branch at the rank of captain.

b. Proponent information. The Commanding General, U.S. Army Combined Arms Support Command, Sustainment Center of Excellence (CASCOM/SCOE), is the proponent for the Logistics branch and the contact office is the Logistics Branch Proponency Office, CASCOM/SCOE, Fort Lee, VA.

c. Functions. Logistics branch officers serve in both operating and generating forces and require extensive knowledge and experience in planning, preparing, executing, and assessing the sustainment warfighting function subcomponent, logistics (see FM 4-0 for discussions on the sustainment warfighting function). Logistics tasks include supply, field services, transportation, maintenance, distribution management, contracting, and related general engineering. Logistics branch officers serve as the Army's explosive ordnance disposal experts. EOD is a highly technical area and is a sub-function of the protection warfighting function (see FM 3-0 and FM 4-0). Additionally, Logistics branch officers should be familiar with the other sustainment warfighting function subcomponents, including the Personnel Services (human resources support, financial management, legal support, religious support, and band support) and Health Services support. Logistics officers may also be called upon to support Special Operations Forces or Joint Forces, and to handle more functions as further changes are made to the Army modular force.

35-3. Officer characteristics required

a. Characteristics required of all officers. All officers are expected to possess the base characteristics that will enable them to develop into agile and adaptive leaders for 21st century. Our leaders must be grounded in Army Values and the warrior ethos, competent in their core proficiencies, and broadly experienced to operate across the full spectrum of conflict. They must be able to operate in Joint, Interagency, Intergovernmental, and Multinational (JIIM) environments and leverage capabilities beyond the Army in achieving their objectives. Our officers must be culturally astute and apply their situational awareness and situational understanding to conduct operations innovatively and courageously to exploit opportunities in the challenges and complexities of the operational environment. Further explanation of these characteristics can be referenced in FM 3-0 and in chapter 3 of this publication. Logistics branch officers recognize that their Soldiers are the cornerstone of our Army, providing service and support to the Warrior and their missions. With this recognition comes the understanding that they must place the welfare of their Soldiers above their own and adhere to Army Values because without our Soldiers, the Army cannot accomplish its mission. Logistics branch officers are self-reliant, agile, proactive leaders who work in asymmetric and unpredictable environments where time available for problem analysis is likely constrained, but where sound, timely decisions are urgent. They must be responsive to a rapidly evolving operational environment and improvise ways and means to accomplish the mission when doctrinal approaches do not apply. The ultimate goal for Logistics branch officers is to never let a mission fail due to lack of quality logistics support. Mission success ultimately requires the proper balance between technical skills and the ability to understand and apply the appropriate tactical skills at the right moment. Success also requires honed

conceptual skills, enabling officers to handle changing situations and ideas. They must be experts in integrating the various aspects of logistics into the commander's plan, and in order to do so, must be heavily experienced in multifunctional logistics and have a basic competence in the skills, knowledge and attributes of supply, maintenance and transportation operations. From the Basic Course forward in a logistics officer's career, tactics are an essential skill set. Tactics will be incorporated in the education of a logistics officer early and continually. Responsiveness, improvisation, and economy are key logistics principles that enable officers to lead units to support an agile combat force and execute operations more swiftly than their opponents.

(1) Responsiveness. Responsiveness is providing the right support in the right place, at the right time, and it includes the ability to foresee operational requirements. Responsiveness involves identifying, accumulating, and maintaining the assets, capabilities, and information necessary to meet support requirements. Responsiveness involves the ability to meet changing requirements on short notice. Anticipating those requirements is critical to providing responsive logistics.

(2) Improvisation. Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission. It includes creating, inventing, arranging, or fabricating what is needed from what is available. It may also involve changing or creating methods that adapt to an enemy that quickly evolves. This requires commanders, their staffs, and Soldiers to improvise other possible means to accomplish an operation. The sustainment commander must apply operational art to visualize complex operations and understand what is possible at the tactical level. These skills enable commanders to improvise operational and tactical actions when enemy actions or unexpected events disrupt sustainment operations.

(3) Economy. Economy means providing sustainment resources in an efficient manner to enable a commander to employ all assets to generate the greatest effect possible. The commander achieves economy through efficient management and discipline by prioritizing and allocating resources. Staffs look for ways to eliminate redundancies and capitalize on joint interdependencies. They also apply discipline in managing resources, minimizing waste and unnecessary stockpiling. Disciplined sustainment assures the greatest possible tactical endurance of the force and constitutes an advantage to commanders who achieve economy of force in sustainment. Staffs also achieve economy by contracting for Host/Partner Nation support that minimizes the use of limited military resources. Economy reflects the reality of resource shortfalls, while recognizing the inevitable friction and uncertainty of military operations. Economy enables strategic and operational reach by reducing unnecessary use of transportation of resources, and minimizing storage and warehouse support.

b. Unique knowledge and skills of a Logistics branch officer. Logistics branch officers must know how to exploit the following aspects of the agile logistics force when planning and executing operations; modular unit designs, force tailoring, and split based operations. Logistics branch officers must know sustainment unit capabilities and how units are employed in order to provide relevant sustainment information to the commander in terms he/she can rapidly apply to the situation, enabling him to visualize, describe, and direct operations. The aforementioned logistics knowledge must be coupled with practical experience in tactics and combined arms operations at the tactical, operational, and strategic levels. Additionally, logisticians must understand the concepts and employment of Joint logistics in order to provide support to the combatant commander wherever the force is located. The Logistics branch incorporates six AOCs and three skill identifiers. Training for these AOCs and skills is open to all male and female Logistics branch officers. Logistics branch officers all have a common, primary AOC, 90A. Officers will also hold another AOC that indicates their chosen specialty within the Logistics branch; these are classified as "Logistics functional areas." Officers will continue their affiliation with the Ordnance, Quartermaster, or Transportation regiments based on this secondary AOC. Refer to the other branch sections of this chapter for a more detailed description of the types of functional units and staff jobs as well as the criteria for obtaining each of the other AOCs.

(1) Multifunctional Logistics (AOC 90A). This is the primary AOC for the Logistics branch. Officers will command and control multifunctional logistics units as well as serve in various multifunctional logistics staff positions. All officers receive this designation as their primary AOC once they graduate from CLC3.

(2) Transportation (AOC 88A). This is one of five Logistics functional areas. Officers holding the 88A AOC will command and control marine, terminal, motor or rail transportation units as well as serve in varied levels of transportation staff positions. Officers holding this skill serve on division or higher staffs/commands at the operational or strategic level in order to provide specialized knowledge of transportation organizations, equipment, and doctrine. Officers will plan, coordinate, and synchronize the rapid deployment, RSO&I, sustainment/distribution management and redeployment of forces in any area of operations.

(3) Explosive Ordnance Disposal (AOC 89E). This is one of five Logistics functional areas. Officers holding the 89E AOC will command and control EOD units as well as serve in varied levels of EOD staff positions. Logistics branch officers possessing this specialty must sign a volunteer statement accepting duty as an EOD officer. Due to the unique nature of this specialty, officers will be utilized primarily in 89E duty positions, followed by 91A ammunition staff officer positions, then 90A positions. Until officers revoke their volunteer statement, 89E will be designated as the primary AOC, 91A as the secondary AOC and 90A as the tertiary AOC.

(4) Maintenance and munitions (AOC 91A). This is one of five Logistics functional areas. Officers holding the 91A AOC will command and control maintenance or ammunition units as well as serve in varied levels of ordnance staff positions.

(5) Supply and services (AOC 92A). This is one of five Logistics functional areas. Officers holding the 92A AOC will command and control quartermaster units as well as serve in varied levels of quartermaster staff positions.

(6) Aerial delivery and materiel (AOC 92D) (Effective 1 October 2010, AOC 92D will become SI R9). Officers attending the Aerial Delivery and Materiel Course will command and control aerial delivery and materiel units as well as serve in varied levels of aerial delivery staff positions.

(7) Petroleum and water (AOC 92F). This is one of five Logistics functional areas. Officers holding the 92F AOC will command and control petroleum and water units as well as serve in varied levels of petroleum staff positions.

(8) Mortuary affairs (SI 4V). Officers attending the Mortuary Affairs Course serve as staff officers for mortuary affairs support.

(9) Theater Logistics Studies Program (SI P1). Officers attending the Theater Logistics Studies Program or Associate Theater Logistics Studies Program will serve as logistics planners, primarily at the ESC/TSC level.

c. Medical Service Corps officer. (MFA 70). The Medical Service Corps officer is an integral part of our support battalion structure and as such, they are offered the chance to hold key developmental positions at the major level, the more common being support operations officer and executive officer. Ideally, officers will attend CLC3 in order to obtain the requisite training in order for them to be successful at those jobs. The Support Operations Course (SOC) and Theater Logistics (TLog) Studies Program are acceptable training substitutes if an officer did not have the opportunity to attend CLC3 as a captain. This applies to both the Active Army and Reserve Component. It is this combination of training and major-level key developmental experiences that allows MSC officers to be competitive for command of multifunctional logistics units as a lieutenant colonel, as well as the opportunity to command them at the brigade level. Those officers who do not have the requisite training and KD experiences will not be allowed to compete in those LTC/COL command categories.

35-4. Officer development

a. Officer Development Model. The Officer Development Model is focused more on the quality and range of experience, rather than the specific gates or assignments required to progress.

(1) Initial entry officers gain branch technical and tactical skills to develop a warrior ethos and gain important leadership experience in company grade assignments in one of the three logistics branches (Quartermaster, Transportation, or Ordnance) prior to induction into the Logistics branch.

(2) Throughout an officer's career, the model highlights the need to gain JIIM experience and exposure.

(3) Functional designation at the 4th or 7th year develops both specific and broad functional competencies. For example, many logistics officers apply to the Acquisition Corps (FA 51). If accepted into this program, officers attend numerous qualification courses and have specific developmental paths for future assignments. However, once officers are accepted into another FA designation, such as FA 51, they will not return to the Logistics branch nor will they be eligible to command logistics units.

(4) Once an officer has received his or her functional designation they should strive for training and assignments that will broaden and develop the skills necessary to lead the Army of the future. These broadening opportunities are outside one's normal branch or functional area career development, and are joint, interagency, intergovernmental, and multinational in nature.

(5) Lifelong learning, supported by both civilian and military education, provides critical opportunities to develop both joint and expeditionary competencies. Expeditionary competencies are those needed by officers in an expeditionary force — regional knowledge, cultural awareness, foreign language, diplomacy, statesmanship, and so forth.

(6) Flexible time lines enable officers to serve longer in developmental assignments ensuring officers have adequate time to gain skills and experience and also support unit readiness and cohesion.

(7) The goal of the professional development of Logistics branch officers is two-fold. First and foremost the goal is to produce and sustain highly qualified, tactically and operationally oriented individuals able to provide seamless logistical support in combat and other missions. These skills are gained and developed through multiple operational assignments and continuous professional study and self-development. Secondly, Logistics branch officers will maintain proficiency in one logistics functional area. Officers will maintain proficiency in their secondary AOC through periodic developmental assignments and self-development. Logistics branch positions that are coded 90A on authorization documents provide the required experience and development in order to gain proficiency as a Logistics branch officer and are only found at the captain and above experience level. Assignments should alternate periodically between 90A assignments and assignments to an officers' chosen logistics functional area of expertise and/or assigned skill identifiers as stated in paragraph 35-3b. However, as an officer gains rank, the majority of time spent should be in 90A positions. Assignment patterns will vary depending on the needs of the Army, professional development requirements, manning guidance, and individual officer preferences. Logistics branch officer career development should include a wide variety of units and organizations to include heavy, Stryker, light, airborne, air assault, and special operations forces. Having diverse experiences will afford logistics officers more possibilities for future assignments while promoting an increased appreciation and level of expertise for a wide range of tactical and operational level logistics operations. Each officer, with support from mentors, should develop career goals and clearly articulate those goals to the commander and assignments officer at the AHRC. Always remember that an officer is his or her own best career

manager. By actively participating in the management of career decisions, officers will improve the likelihood of a successful career.

b. Lieutenant development. Logistics officers are accessed into one of the three functional branches (QM, OD, or TC) and then inducted into the Logistics branch after selection for promotion to captain and successful completion of CLC3.

c. Captain development.

(1) Education. Officers will attend the Combined Logistics Captain Career Course (CLC3), generally between their 3rd-4th YOS. Attendance is mandatory for Logistics lieutenants and captains; there will be no substitution of other CCCs. Officers receive basic instruction in multifunctional logistics, instruction on commanding at the company level, and advanced technical instruction in their chosen logistics functional area.

(2) KD assignments. After graduation from CLC3, captains can expect assignments as company commanders or logistics battalion /brigade staff officers as well as other staff positions in the operating and generating force. Company command is the only key developmental (KD) experience recognized. There are many types of logistics company commands; some are coded 90A, such as the forward support company or distribution company, others are purely functional, such as a field maintenance, ammunition, petroleum pipeline, or cargo transfer company. It does not matter what type of company an officer commands; what does matter is successfully serving as a company commander for at least 12 months. Company command is a KD experience that will enhance an officer's chance for command of a logistics unit at higher levels.

(3) Developmental and broadening assignments. When not commanding a company and executing logistics missions, captains generally serve on logistics staffs, either as a multifunctional or functional expert, tracking current commodity status or planning future logistics support for supported units. During their 4th - 10th YOS, captains normally have a chance to pursue the following additional educational opportunities that enhance and broaden their understanding of multifunctional logistics:

(a) Support Operations Course (SOC). Further develops multifunctional logistics skills normally associated with assignment to a support operations section.

(b) Advanced civilian schooling (ACS). Allows an officer to complete an advanced degree in a logistics discipline, followed by an appropriate utilization assignment.

(c) Training with industry (TWI). Gives officers an appreciation of logistics from an industry point of view and is followed by an appropriate utilization assignment on the Joint or Army DCS, G-4 staff. This program is not degree producing.

(d) Theater Logistics (TLog) Studies Program. A 19-week course (skill identifier producing) specializing in logistics planning at the theater level. A select number of officers may elect to couple this training with a cooperative degree program pursuing an advanced degree in logistics from the Florida Institute of Technology.

(4) Self-development. Logistics branch officers who do not receive the opportunity to participate in the TWI, TLog, or ACS programs are encouraged to obtain graduate-level education in an appropriate discipline. Logistics branch officers must be able to translate information on status and location of resources into the impact on combat effectiveness in the present and near future using emerging information technology. Logistics branch officers should be well versed in all logistics Standard Army Management Information Systems (STAMIS) and C2 Systems, such as the Battle Command Sustainment and Support System (BCS3), Movement Tracking System (MTS), and Global Combat Support System-Army (GCSS-A).

(5) Desired experience. At the company-grade level, logistics officer assignments should be fairly evenly split between multifunctional and functional. As officers progress from company-grade to field-grade, assignments grow increasingly multifunctional. Officers must develop and use a diverse set of skills as they move between functional and multifunctional assignments in the operating and generating force. Logistics branch officers are strongly encouraged to serve on military transition teams (MiTTs) where they will gain valuable leader and training experience.

d. Major development.

(1) Education. Majors must complete ILE which includes the core course and the Advanced Operations and Warfighting Course at Fort Leavenworth, as well as specified logistics electives. Completion of ILE will make officers ILE and JPME I qualified. Attendance at ILE will be an assignment process, not by board selection, and will normally occur between the 8th- 12th YOS. All officers are also encouraged to take advantage of the opportunity at ILE to obtain graduate-level education in an appropriate discipline. After completion of ILE, select officers will have the opportunity to attend the School of Advanced Military Studies (SAMS), one of the U.S. Army's best educational opportunities to develop leaders. The course focuses on educating future commanders and leaders to become operational artists and critical thinkers. The graduates of SAMS are not just planners but great operators who can plan and lead combat formations. These officers will lead our Army for the next 15-20 years.

(2) KD assignments. Majors are primarily staff officers, serving in positions at all levels. They must plan and organize various logistics missions and demonstrate their abilities to manage multifunctional organizations. They build on their skills and experiences from their captain years, have assignments of greater complexity, and prepare themselves to be battalion commanders. An officer's performance during these assignments demonstrates a mastery of logistics skills, knowledge, and attributes. The amount of time spent in key developmental assignments can be varied,

due to unpredictable manning policies. Officers will serve between 12 to 24 months in each assignment, although not required due to the unpredictable nature of stabilization policies. The particular key developmental assignments for which a major is selected and the officer's level of success in those assignments sets the conditions for promotion opportunities to lieutenant colonel and possible selection for battalion command and key billet. There is no one particular KD job in a specific logistics unit that is considered "most important" or a "must have" for promotion selection. However, the type of unit in which you have your key developmental experiences will, in part, influence the type of unit that you may be most suited to command and may dictate your competitiveness within that command category. An officer's manner of performance and senior rater comments on future potential are still the contributing factors towards doing well on command boards. As a Logistics branch officer, you are expected to have mastered the art of logistics as well as be an expert in your chosen secondary field of expertise. The following 90A (Multifunctional Logistics) assignments are considered to be key developmental at the major level:

- (a) Battalion Support Operations Officer
- (b) Battalion Executive Officer
- (c) Brigade/Regimental S4 (any type of TOE brigade)
- (d) Battalion/Brigade/Group S2/3 or Operations Officer (major authorized)
- (e) Major-level company command
- (f) Brigade Logistics Support Team (BLST) chief
- (g) Division Assistant Chief of Staff, Logistics/Corps Assistant Chief of Staff, Logistics/ESC/TSC/ASCC Logistics Planner (SAMS and TLog utilization)
- (h) ALE Team Chief
- (i) Military Transition Team (MiTT)/Provisional Reconstruction Team (major authorized)

(3) Developmental and broadening assignments. Each of the three functional logistics branches, QM, OD and TC within this chapter will list those development assignments that allow officers to maintain their functional expertise in their secondary areas of expertise. Once an officer has completed their key developmental assignment as a major, they should seek to serve in joint, interagency, intergovernmental and multinational organizations and on military transition teams as well as logistics staff positions at the ESC level and higher. In addition, some officers will have an opportunity to attend advance civil schooling and fellowships to obtain post-graduate degrees that will provide the officer with an opportunity to serve at higher level of responsibility.

(4) Self-development. Self-development is the responsibility of every officer and ranges from professional reading during off-duty time to aggressively seeking out positions of increased responsibility. Officers are encouraged to continue to broaden their logistics experience by doing the following: establish a professional reading program, participate in their regimental association, participate in civilian professional logistics organizations, become a certified professional logistician, obtain a civilian degree in logistics-related fields, complete logistics-related correspondence courses, complete courses in joint logistics at ALMC, and conduct research and write articles for professional logistics publications.

(5) Desired experience. A variety of assignments across the logistics spectrum, as well as a combination between the operational and generating force, will enhance an officers key developmental experiences

e. Lieutenant colonel development.

(1) Education. Lieutenant colonels selected for command must complete the Pre-Command Course at ALMC. Lieutenant colonels should continue their self-development in all facets of logistics, particularly in Joint and multinational operations. Many ALMC courses are available, focusing on Joint and multinational logistics as well as national-level logistics. All officers are encouraged to obtain a graduate-level education in an appropriate discipline.

(2) KD assignments. Developmental experience gained as a lieutenant colonel provides the Army with officers in senior grades who have further expanded their mastery of both multifunctional and functional logistics skills. Lieutenant colonels serve primarily in key staff and/or Joint positions in sustainment brigade headquarters, expeditionary sustainment commands, theater sustainment commands, division, corps, and higher staffs. The following assignments are considered to be key developmental at the lieutenant colonel level:

- (a) Battalion Commander
- (b) Division Assistant Chief of Staff, Logistics
- (c) Distribution Management Center Chief
- (d) Support Operations Officer (lieutenant colonel authorized)
- (e) Deputy Commander/Executive Officer
- (f) Joint Staff Officer

(3) Developmental and broadening assignments. Each of the three functional logistics branches, QM, OD and TC within this chapter will list those development assignments that allow officers to maintain their functional expertise in their secondary areas of expertise. Once an officer has completed their key developmental assignment as a lieutenant colonel, they should seek to serve in joint, interagency, intergovernmental, and multinational organizations and on military transition teams as well as logistics staff positions at the ESC level and higher. In addition, some officers will

have unique opportunities, such as attend senior service college, participate in fellowship programs, and serve as congressional liaison officers that will provide them with opportunities to serve at higher level of responsibility.

(4) Self-development. Lieutenant colonels should expand their military professional reading program to include other services and logistics periodicals, and magazines, participate in civilian professional logistics organizations, become a certified professional logistician, conduct research and write articles for professional logistics publications, and obtain a post-graduate degree in a logistics discipline. Additionally, officers should attend Six Sigma or Lean Six Sigma training and certification programs that will assist them in improving their organizations business processes.

(5) Desired experience. Select lieutenant colonels will have the opportunity to command battalions. Successful battalion command and key billet assignment, while not mandatory for promotion to colonel, will enhance the officer's potential for brigade command.

f. Colonel development.

(1) Education. Although no specific mandatory military education requirement exists for colonels, attendance at a SSC or completion of the AWC Distance Education Course identifies those officers with exceptional promotion potential for service in positions of increased responsibility at the next higher grade. All officers are encouraged to obtain a graduate-level education in an appropriate discipline. Officers should continue their self-development in logistics skills and keep current as to the future changes within the logistics arena affecting Soldiers and units.

(2) KD assignments. Experiences at the colonel level are primarily staff assignments at the operational and strategic level. Currently, commands make up only 26 percent of colonel-level positions; all are considered key developmental. Corps and higher staff DCS, G-4 positions as well as Joint assignments are viewed as key for career enhancement, as well as important to the Army.

(3) Developmental and broadening assignments.

(a) Brigade Commander

(b) Corps DCS, G-4

(c) AMC Logistics Staff Officer

(d) DCS, G-4 Logistics Staff Officer

(e) Joint Staff Officer

(f) DCS, G-3/5/7/G-8 Staff Officer

(g) ESC/TSC Support Operations Officer/Chief of Staff

(h) DA IG

(i) COCOM Log Staff Officer

(4) Self-development. Colonels should continue to expand their professional reading program, participate in civilian professional logistics organizations, become a certified professional logistician, conduct research and write articles for professional logistics publications, and obtain a post-graduate degree in a logistics discipline. The following is a list of courses and fellowships that select colonels will have an opportunity to attend in conjunction with the Senior Service College program.

(a) LOGTECH Executive Course

(b) SSC - MIT Logistics Fellowship

(c) SSC - OSD Corporate Fellowship

(d) Joint Course - JPME

(5) Desired experience. Colonels will serve primarily in key staff and/or Joint positions in expeditionary sustainment commands, theater sustainment commands, and division, corps, and higher staffs. Select colonels will have the opportunity to command brigades. Successful brigade command will provide an opportunity to compete for brigadier general. Former brigade commanders are given the opportunity to serve as deputy commanding officers, chiefs of staff and support operation officers of expeditionary sustainment commands, and deputy commandant at the Ordnance, Transportation and Quartermaster Schools. In addition, former brigade commanders can serve as executive officers for general officers to the commanding generals of the logistics ACOMs and Army DCS, G-4.

35-7. Introduction to the Transportation branch

a. Purpose. The Transportation branch provides the transportation capabilities that are essential for a CONUS-based power projection Army in support of the National Military Strategy and the physical capabilities necessary to affect agile maneuver and movement of forces and materiel at tactical, operational, and strategic levels. The Transportation branch consists of officers, WOs, enlisted, and civilian personnel responsible for the worldwide movement of units, personnel, equipment, and supplies in peace and war. The Transportation branch moves critical supplies rapidly, under positive control, through an integrated, transportation-based global distribution system, leveraging emerging technologies. It provides movement control, in-transit visibility, and directs distribution to deployed forces in a dynamically fluid, nonlinear battlefield. The current operating environment demands focused logistics that is responsive, flexible, and precise. Focused logistics uses information, logistics, and transportation technologies to provide rapid crisis response, capable of tracking and shifting assets even while en route, and delivering sustainment at the tactical, operational, and strategic levels of operations. The Transportation branch is the "Spearhead of Logistics" because "Nothing Happens until Something Moves."

b. Proponent information. The Commanding General, U.S. Army Transportation Center and School (USATC&S) is the proponent for the Transportation branch and the contact office is the Office of the Chief of Transportation (OCOT), Fort Eustis, VA.

c. Functions. Functions performed by the Transportation branch include—

(1) Planning, operating, scheduling, coordinating, supervising, and evaluating all methods of transportation for the effective movement of units, personnel, equipment, and supplies in a transportation-based, Joint-global defense, and commercial deployment and distribution systems.

(2) Synchronizing all elements of the logistics distribution system to deliver the "right things" to the "right place" at the "right time" to support the geographic combatant commander.

(3) Commanding all types of transportation, movement control, marine, terminal and rail organizations tasked with

planning and executing personnel and cargo movement, or other logistics distribution requirements within a geographic area.

(4) Recommending priorities, coordinating tasks, documenting cargo and/or personnel to be transported, allocating resources, and determining the mode(s) necessary for the optimum utilization of assets and timely mission accomplishment.

(5) Planning, executing, tracking, and controlling movements of units, supplies, and sustainment from the source to the combatant.

(6) Planning and providing theater port opening terminal services for all modes of transportation and stevedoring services at fixed ports, unimproved ports, bare-beach sites, and during joint-logistics-over-the-shore (JLOTS) operations.

(7) Providing highway, rail, marine, and terminal support for Army and joint operations, as well as supporting all types of Joint, Interagency, Intergovernmental, Multinational (JIIM) operating environments.

(8) Providing DOD worldwide, single agency management for military traffic, land transportation, and common-user ocean terminals.

(9) Developing transportation concepts and doctrine, unit organizations and the requirements to support acquisition of transportation systems for the Army.

(10) Providing training and professional development for DOD, Army, and civilian personnel in transportation and deployment methods.

(11) Providing supply and maintenance support for marine and rail equipment.

(12) Providing management and utilization of assets in support of terminal clearance, theater motor transport services and operational mobility, truck terminal/trailer transfer points, drive-away, retrograde, container and inter-modal operations.

(13) Playing a key role in the development, procurement, and life-cycle management of transportation-related equipment, systems, and personnel.

35-8. Officer characteristics required

a. Characteristics required of all officers. All officers are expected to possess the base characteristics that will enable them to develop into agile and adaptive leaders for the 21st century. These leaders must be: competent in their core proficiencies, broad enough to operate across the spectrum of conflict, able to operate in JIIM environments and leverage other capabilities in achieving their objective, culturally astute and able to use this awareness and understanding to conduct operations innovatively, courageous enough to see and exploit opportunities in the challenges and complexities of the operational environment, and grounded in Army Values and warrior ethos. Further explanation of these characteristics can be referenced in FM 3-0 and in chapter 3 of this publication.

b. Unique knowledge and skills of a transportation officer. Transportation branch officers and WOs may routinely work at any of the three levels of war; tactical, operational, and strategic. This is not limited to a specific grade; for example, a lieutenant may operate an Arrival/Departure Airfield Control Group (A/DACG), which can be a Joint operation at both operational and strategic levels. Transportation officers will find themselves working in Joint environments or participating in Joint operations far more frequently than other branches.

c. Competencies and actions. The six core competencies of the Transportation branch are strategic deployment, movement control, terminal operations, water transport, highway transport and rail transport. Transportation officers must be technically proficient with employment of transportation and mission-unique equipment, personnel, and systems. Transportation officers must understand transportation, supply, and maintenance automated systems. In addition to working independently, Transportation officers often work in an environment where there is little time available for problem analysis, but sound and timely decisions are crucial. Mission success requires the proper balance between technical know-how and the ability to understand and apply the appropriate tactical expertise at the right moment. Hence, the ability to operate under stress, make decisions, and act under primitive field conditions is critical to success.

d. Unique skills. Transportation officer skills are found in one AOC. The Transportation branch has three different MOSs within the WO technical fields; marine operations, marine maintenance, and deployment/distribution operations.

(1) Transportation (AOC 88A). Officers command, plan, procure, direct, control, coordinate, or manage transportation organizations and related equipment, as well as organizations engaged in transportation-related services. This requires general knowledge of transportation organizations and doctrine concerning traffic management, marine and terminal operations, and motor/rail transport units. Officers also serve in positions requiring specialized transportation knowledge as well as functional experience at higher levels of operations and organizations engaged in transportation-related services with the unique capability to plan, coordinate and synchronize the rapid deployment, sustainment/distribution management and redeployment of forces in any area of operations. Traffic management officers command, plan, procure, coordinate, and control the movement of personnel and military freight worldwide by military or commercial transport. Marine and terminal operations officers command, direct, control, coordinate, manage, or serve in positions in water transport, marine maintenance, marine terminal, or inland terminal units or organizations. Duties encompass the command, control, or management of fixed ports, unimproved ports, and bare-beach facilities; air, rail,

motor, and inland waterway terminal operations; JLOTS operations; and marine maintenance and salvage operations. Motor/rail transport officers command, direct, control, coordinate, manage, or serve in positions in motor (truck), rail, truck terminal, or trailer transfer units or organizations. Duties encompass command, control, management, and utilization of motor assets in support of terminal clearance, theater motor transport services and operational mobility, truck terminal/trailer transfer points, area support, drive-away, retrograde, container and intermodal operations. Transportation officers serve in Joint assignments, manage transportation personnel life-cycle functions, develop doctrine, organizations and equipment, and instruct transportation skills at Service schools, Service colleges, pre-commissioning and commissioning programs, and CTCs. Transportation officers assist USAR and ARNG transportation organizations. Examples of Transportation duty positions are:

- (a) Transportation officer.
- (b) Transportation Plans officer.
- (c) Air Movements officer.
- (d) Division/Corps transportation officer.
- (e) Surface Deployment and Distribution Command (SDDC) commander/staff officer.
- (f) Passenger movement officer.
- (g) Terminal unit commander/XO/staff officer.
- (h) Inland cargo transfer company commander/platoon leader/XO.
- (i) Watercraft and causeway unit commander/platoon leader/XO.
- (j) Seaport operations company commander/platoon leader/XO.
- (k) Floating craft maintenance company commander.
- (l) Motor (truck) transport commander/staff officer/platoon leader/XO.
- (m) Rail operations commander/staff officer/platoon leader/XO.

(2) Marine deck WO (MOS 880A). This MOS has two distinct skill levels of technical training and professional credentialing; MOS 880A1 and 880A2. Officers within this MOS command and operate Army watercraft and watercraft detachments; serve aboard Army watercraft as the commanding officer, master, navigator, cargo officer or deck watch officer; serve as an Army harbormaster or port operations officer; serve on a battalion-level staff or higher as an operations officer; or as a Service school instructor.

(3) Marine engineering WO (MOS 881A). This MOS has two distinct skill levels of technical training and professional credentials; MOS 881A1 and 881A2. Officers in this MOS command watercraft maintenance detachments and maintain Army watercraft, serve as chief engineer, assistant engineer, or engineering watch officer; or may serve on a battalion-level staff or higher as a maintenance officer or as a Service school instructor.

(4) Mobility WO (MOS 882A). The skills and knowledge necessary to qualify for this specialty requires technical expertise to plan, organize, and supervise the movement, deployment, and redeployment of Army personnel and equipment. They must also be able to coordinate deployment and redeployment with Joint, Army, and commercial agencies as well as provide technical expertise and guidance on the implementation and use of transportation automation systems. Mobility officers coordinate and conduct training on unit deployment and redeployment operations. They advise and assist commanders and staffs on deployment movement, sustainment, maneuver, and redeployment operations. Officers in this MOS may serve at company level or higher, or as a Service school instructor.

(5) Other key officer skills.

(a) Junior leadership (company grade). Junior Transportation officers work in an extremely fluid and dynamic environment with a wide variety of personnel and equipment. Since they often work independently with minimum guidance, supervision or support, creative thinking, and problem solving are critical skills. Officers will encounter information that varies in completeness and ambiguity. Therefore, it is imperative that Transportation officers can communicate effectively in both written and verbal forms. Officers should also develop excellent supervisory skills to ensure proper execution of all assigned tasks and missions. Transportation officers must be tactically proficient and must attain a mastery of troop leading procedures, unit defense operations, and tactical convoy operations.

(b) Senior leadership (field grade). Even though envisioning may be considered a conceptual skill, it is essentially a group process and is a talent that all senior Transportation officers need for professional development. Envisioning and innovation contribute to the operational success of missions and assigned tasks by a process that includes establishing purpose, vision, values, goals, and objectives. Senior Transportation officers should focus on other conceptual skills, such as critical and moral reasoning, systems understanding, and analysis. The senior Transportation officer's job becomes much more difficult because they must not only have a mastery of technical skills, they must also be able to mentor junior leaders in these skills. Their technical skills become more complex because they are involved in resourcing, allocating, integrating, and synchronizing transportation equipment, personnel, and technologies, which culminate in expert managerial abilities.

(6) Unique knowledge. Transportation branch officers must possess an expert knowledge of transportation and multifunctional logistics support systems, personnel, equipment, and operations. This knowledge includes practical experience in transportation and multifunctional logistics operations and the employment of those systems. Specifically, Transportation officers must strive to possess and maintain a comprehensive understanding of the following:

- (a) Power projection of forces and sustainment.
- (b) Battlefield distribution.
- (c) Movement control.
- (d) JLOTS operations.
- (e) Inter- and intra-theater transportation operations.
- (f) Emerging transportation technologies.
- (g) Transportation automated systems:
 1. Automated Air Loading Planning System (AALPS).
 2. Automated Movement Flow Tracking System (AMFT).
 3. Cargo Movement Operation System (CMOS).
 4. Computerized Movements Planning and Status System (COMPASS).
 5. Enhanced Logistics Intra-theater Support Tool (ELIST).
 6. Global Transportation Network (GTN).
 7. Global Command and Control System-Army (GCCS-A).
 8. Integrated Booking System (IBS).
 9. Integrated Computerized Deployment System (ICODES).
 10. Battle Command Sustainment Support System (BCS3).
 11. Joint Flow and Analysis System for Transportation (JFAST).
 12. Joint Force Requirements Generator II (JFRG II).
 13. Joint Operation Planning and Execution System (JOPES).
 14. Mobilization Movement Control System (MOBCON).
 15. Transportation Coordinators' Automated Information for Movement System II (TC-AIMS II)
 16. Worldwide Port System (WPS).
 17. Movement Tracking System (MTS).
 18. Single Mobility System
 19. Global Air Transportation Execution System (GATES).
- (h) Roles and functions of the SDDC.
- (i) Roles and functions of the U.S. Transportation Command (USTRANSCOM).
- (j) Roles and functions of the Defense Logistics Agency (DLA).
- (k) Army maintenance and supply systems and automation.
- (l) Distribution management.

(7) Unique attributes. Everything begins with the warrior ethos. warrior ethos is the foundation for our total commitment to victory in peace and war. It is the conviction that military Service is much more than just another job. It defines who officers are and what officers do. Officers require a demonstrated mastery of branch-specific skills, and grounding in the seven Army Values in order to successfully lead Soldiers as the Army transforms. All officers must be physically and mentally fit, maintain and display self-control, remain calm under pressure, and adhere to published standards and regulations.

35-9. Critical officer developmental assignments

a. Officer development. Officers may use the Transportation branch training and development model (see fig 35-3) as a guideline for maintaining functional expertise throughout their career. Logistics branch developmental model is at figure 35-1 and discussed in paragraph 35-4. All Transportation branch positions are open to male and female officers with the exception of the ranger regiment movement control officer, which is specific to male officers. The purpose of leader development is to ensure that the officer has acquired the necessary skills and experience, the breadth and depth of knowledge, and attributes that are required to grow officers who are the centerpiece of a campaign quality Army with a Joint expeditionary mindset.

b. Broadening experience. Officers should also seek opportunities that expose them to experiences outside of their core competencies to gain a wider range of knowledge and skills. These broadening experiences should enhance an officer's ability to perform in an ever changing, complex environment across the spectrum of conflict at the tactical, operational, and strategic levels.

35-10. Active Army Transportation Developmental Model

a. Lieutenant. After completing the Transportation BOLC III, officers are normally assigned at the company level to gain leadership experience and to enhance technical and tactical competence. The focus of lieutenants should be on acquiring and refining troop leading procedures, technical skills, training and administrative skills. Prior to promotion to captain, lieutenants should possess an excellent knowledge of the Transportation branch's purpose, mission, and core competencies. This includes practical experience in Transportation operations, activities, and missions. Special training necessary to support an officer's follow-on assignment may be scheduled after BOLC III. Lieutenants should expect to

serve as a platoon leader, detachment commander, or as an XO for a period of time that allows the officer to gain depth of skills and experience. In all assignments, lieutenants should concentrate on learning the basics of how the Army works, how to lead Soldiers, and how to maintain a motivated and positive outlook. Officers should expect to serve in progressive positions to develop leadership, technical skills and, when appropriate, to complement this with staff experience at the battalion and brigade level. BOLC III certifies lieutenants as the subject matter experts for unit movement and deployment requirements (Unit Movement Officer). Typical Transportation lieutenant duty positions include:

- (1) Transportation unit platoon leader.
- (2) Transportation unit XO.
- (3) Detachment commander.
- (4) Battalion transportation staff officer.

b. Captain. Captains must be proficient in all transportation core competencies in order to be an effective leader at the company and battalion level. Captains should aggressively prepare for and seek company-level command. Captains should continue to gain an in-depth understanding of all aspects of transportation operations as well as multifunctional logistics operations in order to serve in various staff positions at all levels such as—

- (1) Transportation staff officer.
- (2) Movement control officer.
- (3) Terminal operations officer.
- (4) Service school instructor.
- (5) Combat training center observer controller/trainers (OC/T).

c. Major. Majors should aggressively seek the skills and experience that will best prepare them for the duties at the lieutenant colonel level. Majors must exercise continuous self-development efforts to fully master all aspects of transportation operations and multifunctional logistics to include Joint and multinational operations. This includes honing transportation skills already gained at the company-grade level. The Transportation major may further expand his tactical and technical skills by serving in staff assignments at Division level and higher. The Division Transportation Officer position is considered a key developmental experience. Each officer should have sufficient experience and participate in a capstone event in these KD assignments in order to develop an understanding of transportation and logistics operations. There is no substitute for preparing a Transportation officer for future command and for building his transportation and logistics skills. The SAMS graduate Transportation officer utilization, when served in conjunction with at least 12 months service in a battalion or brigade S3/XO/SPO position is also considered a key developmental experience. Transportation competencies reside in the following assignments:

- (1) Battalion/Group/Brigade XO.
- (2) Battalion/Group/Brigade S3
- (3) Division/Brigade/Battalion Transportation Officer
- (4) Army Service Component Command (ASCC) DCS, G-4 plans/air movements officer.
- (5) Movement Control Team commander.
- (6) SDDC company commander

d. Lieutenant colonel. The objective in lieutenant colonel assignments is to give officers the opportunity to make a greater contribution to the Army. While the majority of positions at this level are multifunctional, officers will be called upon to fill transportation staff or command assignments, such as the following:

- (1) Commander of a battalion.
- (2) SDDC transportation staff officer.
- (3) HQDA/ACOM transportation staff officer.
- (4) Sustainment command/sustainment brigade transportation staff officer.
- (5) U.S. Transportation Command (USTRANSCOM) staff officer.

e. Colonel. Critical Transportation competencies are found in the following assignments.

- (1) Commander of a brigade.
- (2) Chief of Staff.
- (3) Distribution Manager.
- (4) SDDC transportation staff officer.
- (5) USTRANSCOM staff officer.
- (6) ESC/TSC staff officer

35-13. Introduction to the Ordnance Branch

a. *Purpose.* If the Army shoots it, drives it, loads it, communicates with it, or it explodes, then the Ordnance branch arms it, recovers it, repairs it, welds it, and renders it safe. The Ordnance branch consists of 107,000 Soldiers with 34 enlisted MOSs, 9 WO specialties and 2 officer AOCs. Ordnance Soldiers serve in every unit in the Army.

b. *Proponent information.* The Office of the Chief of Ordnance serves as the proponent for the Personnel Development System for Ordnance officers, warrant officers, Soldiers, and related civilian occupational series, and their associated life-cycle management functions. The contact office is the Ordnance Personnel Proponency Office, QC&S, Fort Lee, VA, 804-765-7384/7385.

c. *Functions.* The Ordnance branch core competencies are maintenance, ammunition management, and explosives ordnance disposal (EOD). The Ordnance branch is responsible for providing expertise in materiel maintenance of combat firepower systems, ground mobility materiel, mobile electric power generation equipment, mobile environmental conditioning equipment, armament and electronics, air defense systems, EOD, and munitions management. The Ordnance branch also provides functional area expertise to support combat developments, materiel systems development, force development, and training development.

d. *History and background.* Ordnance branch officers are logisticians performing the sustainment warfighting functions of maintenance and munitions management, and EOD. The Ordnance branch has armed and maintained the Army since 1812. The Ordnance Regimental spirit lives on with our motto: Service to the Line, on the Line, On Time. "Sustainment determines the depth and endurance of Army Operation and is essential to retaining and exploiting the initiative." Ordnance officers serve at all levels of the Army sustaining the life-cycle of the Army's materiel from cradle to grave and protecting the Army's forces through EOD operations.

35-14. Ordnance officer characteristics required

a. *Characteristics required of all officers.* All officers are expected to possess the base characteristics that will enable them to develop into agile and adaptive leaders for 21st century. Our leaders must be grounded in Army Values and the warrior ethos, competent in their core proficiencies, and broadly experienced to operate across the spectrum of conflict. They must be able to operate in JIM environments and leverage capabilities beyond the Army in achieving their objectives. Our officers must be culturally astute and able to use their awareness and understanding to conduct operations innovatively and courageously to exploit opportunities in the challenges and complexities of the operational environment. Further explanation of these characteristics can be referenced in FM 3-0 and in chapter 3 of this publication.

b. *Unique knowledge and skills of an Ordnance officer.* Lieutenants assessed into the Ordnance branch will develop functional branch skills defined by their area of concentration (AOC) for the first 3-4 years of their career. All Ordnance AOCs and skill identifiers are open to male and female officers. There are two AOCs for Ordnance officers. Upon graduation of the Combined Logistics Captain Career Course (CLC3), Ordnance officers will hold a primary AOC 90A with a secondary AOC of 91A. (See chapter 35-4 for an explanation of Logistics branch officers). Notwithstanding this, these officers will maintain their Ordnance Regimental affiliation, and may continue to serve in Ordnance functional assignments throughout their career. The EOD (AOC 89E) officers may continue to serve in AOC 89E throughout their career, or rotate between AOC's 90A, 91A, and 89E.

(1) Materiel Maintenance and Munitions Management Officer (AOC 91A). Officers working in this AOC manage Ordnance Soldiers and the Army maintenance process that ensures weapon systems are operational, ready, and available. Officers are responsible for integrated maintenance support of Army conventional weapon systems, small arms, artillery, fire control equipment, missile systems and their associated ground support equipment; electronics; track and wheel vehicles; and engineer and power generation equipment. Maintenance functions include metalworking, fabrication, welding, inspection, test, service, calibration, repair, overhaul, and reclamation. Officers must develop a comprehensive knowledge of maintenance management techniques and integrated logistics support. Officers must be technically competent in production control and quality assurance techniques. The technical sophistication of today's Army weapon systems; the high dollar cost of production, fielding and maintaining; and their tactical importance require officers with the highest managerial and leadership skills. Officers also participate in the management of the Army's munitions inventory. These officers lead, manage, plan, and direct ammunition supply, storage, transportation, maintenance, surveillance, inspection, stock control, safety, and security, including maintenance of associated test and handling equipment. The increasing technical sophistication of the various munitions in the Army's inventory, along with the rapid expenditures of ammunition across the force, requires officers to be closely involved in managing the precious ammunition commodity that the Army uses and trusts these officers to provide for the fight.

(2) Explosive Ordnance Disposal (AOC 89E). Officers must volunteer to become qualified for EOD. Only Ordnance officers are eligible to apply for EOD. There are two opportunities to enter into the EOD field: after completion of Ordnance Basic Officer Leader Course III (BOLC III) or CLC3. Procedures for volunteering are located in DA Pam 351-4 and AR 611-105. Officers must complete an intense two-phased EOD course prior to being awarded this designation. EOD Phase I is conducted at Redstone Arsenal, AL, and EOD Phase II is at the Joint EOD course at Eglin

Air Force Base, FL. EOD officers provide a unique and critical service to the Army, U.S. federal agencies, and local law enforcement and operate within the full spectrum of joint, interagency, intergovernmental, and multinational (JIIM) operations. EOD officers plan, develop, and integrate EOD operations for all types of contingency operations. These officers advise, integrate, and execute the "render safe" operations of chemical, biological, radiological, nuclear, and explosive ordnance disposal (CBRNE) functions stemming from threats posed by unexploded ordnance (UXO), improvised explosive devices (IED), and weapons of mass destruction (WMD). These officers lead, manage, plan, and direct activities and organizations concerned with identification, location, rendering safe, handling, removal, and disposal of U.S. and foreign unexploded conventional, nuclear, and chemical munitions and IEDs. Additionally, EOD officers provide support/protection to the President of the United States, senior American officials, military and foreign dignitaries, and support intelligence activities through analysis of foreign munitions, technical and biometric exploitation of IEDs, and perform the forensic analysis of post-blast explosive materials.

35-15. Ordnance officer development

a. Officer Development Model. The Officer Development Model is focused more on the quality and range of experience, rather than the specific gates or assignments required to progress.

(1) Initial entry officers gain branch technical and tactical skills to develop a warrior ethos and gain important leadership experience in company grade assignments.

(2) Throughout an officer's career, the model highlights the need to gain Joint, Interagency, Intergovernmental and Multinational (JIIM) experience and exposure.

(3) Functional designation at the 4th or 7th year develops both specific and broad functional competencies.

(4) Once an officer has received his or her functional designation they should strive for training and assignments that will broaden and develop the skills necessary to lead the Army of the future. These broadening opportunities are outside one's normal branch or functional area career development, and are joint, interagency, intergovernmental, and multinational in nature.

(5) Lifelong learning, supported by both civilian and military education, provides critical opportunities to develop both joint and expeditionary competencies. Expeditionary competencies are those needed by officers in an expeditionary force — regional knowledge, cultural awareness, foreign language, diplomacy, statesmanship, and so forth.

(6) Flexible time lines enable officers to serve longer in developmental assignments ensuring officers have adequate time to gain skills and experience and also support unit readiness and cohesion.

b. Ordnance lieutenant development. Ordnance lieutenants lead Soldiers in platoons and sections in semi-autonomous activities in the fight or in support of the fight.

(1) Education. During the second lieutenant years, Ordnance lieutenants are required to complete Ordnance BOLC III and complete a bachelor's degree. Upon graduation from Ordnance BOLC III, officers should expect to serve at the company level in order to execute Ordnance competencies, such as field and sustainment maintenance operations, workload management, use of Standard Army Management Information Systems (STAMIS), requisition, stock control, and flow of repair parts and ammunition, and if EOD, dispose of and render safe unexploded ordnance.

(2) Assignment. Lieutenants will serve in one or more of the following positions: Typical positions may include, but are not limited to, platoon leader, maintenance control officer, company executive officer, ammunition control officer, EOD Operations officer, Assistant S-4, or operations officer. Lieutenants may also gain staff experience at battalion level. Because all initial assignments are important, all officers should be primarily concerned with manner of performance, development of professional attributes, enthusiasm for the job, and demonstration of potential.

(3) Self-development. Lieutenants must focus on acquiring and refining troop-leading skills, Ordnance competencies, communication, management, and technical and tactical skills.

(4) Desired experience. Lieutenants should strive to become technical and tactical experts by training with the WOs and senior enlisted Soldiers in their units. Lieutenants must learn the intricacies of how to best lead and take care of troops to support their commands and manage the maintenance process, such as manage work order flow, common equipment failures and repair, repair parts management, and tracking work orders and parts status through automated systems. Before promotion to captain, officers should possess an excellent knowledge of the Ordnance competencies and have basic knowledge of other logistics competencies.

c. Ordnance captain development.

(1) Education. Upon graduation of the Combined Logistics Captain Career Course (CLC3), Ordnance officers will be inducted Logistics branch. (See chapter 35-4 for an explanation of Logistics branch.)

(2) KD assignments. Company command is the only key developmental experience recognized at the captain level.

(3) Developmental and broadening assignments. Along with command, captains continue to gain an in-depth understanding of the multiple aspects of logistical operations and are more involved with battalion and brigade-level staff operations. Ordnance captains positions include Transition Team Maintenance Mentor, maintenance staff officer, ammunition supply officer, munitions materiel management officer, EOD operations officer, or observer/controller at Army or Joint training centers.

(4) Self-development. All Ordnance officers should seek opportunities available to them within all Ordnance competencies. For example, officers who have worked ammunition should seek opportunities in maintenance positions.

(5) Desired experience throughout this period, the officer continues to develop leadership, tactical, technical, and management skills. This foundation of knowledge is required to effectively serve as a leader at the company and battalion level. Captains gain a working knowledge of command principles, battalion-level staff operations, and logistical operations at the battalion to brigade levels.

d. Ordnance major development. Ordnance majors continue development efforts through ILE and key developmental assignments encompassing all aspects of multifunctional logistics as well as functional Ordnance areas. Majors desiring to command Ordnance functional battalion-level troop units should have previous functional assignment experience.

(1) Education. Ordnance majors continue development efforts through ILE and key developmental assignments encompassing all aspects of multifunctional logistics as well as functional Ordnance areas. Though not required, majors desiring to command Ordnance functional battalion-level troop units should have previous Ordnance branch or functional assignment experience. Ordnance majors should also seek assignments in JIIM organizations toward joint service qualification.

(2) Key developmental assignments. Although there is no one particular KD job in a specific logistics unit that is considered "most important" or a "must have" for promotion selection, the type of unit in which you have your key developmental experiences will, in part, influence the type of unit that you may be most suited to command and may dictate your competitiveness within that command category. OD major key developmental assignments include the following positions:

- (a) Ammunition Battalion Executive Officer
- (b) Ammunition Battalion Operations Officer (S3)
- (c) EOD Battalion Executive Officer
- (d) EOD Brigade and Battalion Operation Officer (S3)
- (e) Transition Team Senior Mentor.
- (f) Brigade Logistics Support team Chief.

(3) Developmental and broadening assignments. Ordnance officers should seek assignments to gain experience at the corps level or higher and in JIIM organizations. Positions include: Transition Team Senior Mentor, Senior Observer/Controller at Army and Joint Training Centers, XO or primary staff officer in a maintenance, ammunition, or EOD battalion or group, and Corps or JIIM level ammunition officer.

(4) Self-development. Officers should devote time to a professional reading program to broaden their warfighting perspective and should include correspondence courses, civilian education, and institutional training.

(5) Desired experience. Field grade officers should strive to become an expert in all aspects of logistics and the application of Ordnance competencies to include application within the context of JIIM operations.

e. Lieutenant colonel development. The majority of LTC positions are designated multifunctional. However, officers serving in primary AOC 89E and/or secondary AOC 91A may be assigned to functional Ordnance command and staff positions. As with majors, Ordnance lieutenant colonels should also seek assignments JIIM organizations toward joint service qualification.

(1) *Education.* OD lieutenant colonels should continue to seek educational opportunities that enhance battalion command potential, and multifunctional, functional and joint service experience. Selected OD lieutenant colonels will attend Senior Service College (SSC), senior professional military education and leader development training that prepare senior leaders to assume strategic leadership responsibilities in military or national security organizations. OD lieutenant colonels selected for CSL Battalion Command/Key Billet positions will attend applicable Pre-Command Courses.

(2) *Key developmental assignments.* Successful command of any CSL logistics, multifunctional, or functional maintenance, ammunition or EOD battalion.

(3) *Developmental and broadening assignments.* Ordnance officers should seek assignments and experience at the corps level or higher, and in JIIM organizations. Positions include: Transition Team Senior Mentor, Senior Observer/Controller at Army and Joint Training Centers, primary staff officer for maintenance, ammunition, or EOD at the corps level or higher.

(4) *Self-development.* Officers should devote time to a professional reading program to broaden their warfighting perspective and should include correspondence courses, civilian education, and institutional training. Officers should submit articles to professional publications.

(5) *Desired experience.* These assignments have increased responsibility and require mature, skilled, and well-grounded officers. Field grade officers should strive to become an expert in all aspects of logistics and the application of Ordnance competencies.

f. Ordnance colonel development. The majority of colonel positions are designated multifunctional and joint duty. However, officers holding primary AOC 89E and/or secondary AOC 91A/D may be assigned to functional Ordnance command and staff positions. Ordnance colonels should continue to seek assignments in JIIM organizations toward joint service qualification.

(1) Education. Selected OD colonels will attend Senior Service College (SSC), senior professional military education and leader development training to prepare senior leaders to assume strategic leadership responsibilities in military

or national security organizations. OD colonels selected for CSL Brigade level Command/Key Billet positions will attend applicable Pre-Command Courses.

(2) KD assignments. Successful CSL designated OD Colonel Command/Key Billet selection is the most critical colonel key developmental assignment.

(3) Developmental and broadening assignments. In addition to multifunctional logistics positions, Ordnance colonels can serve in key staff positions at Army, joint, and senior-level headquarters, such as USA Tank-Automotive and Armaments Command and Army Materiel Command.

(4) Self-development. Self-development opportunities include nonresident SSC completion for those not selected for resident course attendance. Other educational opportunities include: graduate degree, Joint Forces Staff College (Joint Professional Military Education Level II), and International Society of Logistics Engineers (SOLE) Certified Professional Logistician Program.

(5) Desired experience. Colonels will serve primarily in key staff and/or joint positions in expeditionary sustainment commands, theater sustainment commands, and division, corps, and higher staffs. Select colonels will have the opportunity to command brigades. Successful completion of brigade command will provide an opportunity to serve in positions of greater responsibility. Former brigade commanders are given the opportunity to serve as deputy commanding officers, chiefs of staff and support operation officers of expeditionary sustainment commands, deputy commandant at the Ordnance, Transportation and Quartermaster Schools. In addition, former brigade commanders can serve as executive officers for general officers to the commanding generals of the logistics ACOMs and Army DCS, G-4.

35-19. Introduction to the Quartermaster Branch

a. Purpose. Quartermasters have a proud legacy of sustaining Soldiers since 1775 and are the Army's logistics warriors who provide supply and service support to America's forces anywhere in the world at anytime. Quartermasters play key roles in generating and sustaining combat ready units. Combat readiness is achieved with logistical readiness; the timely delivery of serviceable materiel and sufficient resources with the systems to sustain operations on a fluid battlefield is critical to generating capabilities to fight and win the joint fight. The officers, warrant officers, and enlisted Soldiers of the Quartermaster branch sustain military operations by providing timely supply support, field services, aerial delivery support, materiel, and distribution management. They are responsible for doctrine, training, and professional development of Active Army, Reserve Component (RC), civilian personnel, other Services and allies in U.S. Army Quartermaster skill areas. Quartermasters, combined with logistics warriors from Ordnance and Transportation, are the key to sustaining Soldiers, directing logistics plans and operations across the entire operational spectrum of conflict.

b. Proponent information. Officer Proponent, Office of the Quartermaster General, U.S. Army Quartermaster Center and School, (804) 734-3441, qmoofficerproponent@lee.army.mil.

c. Functions. The primary functions of the Quartermaster branch is to provide general supply support, field services, mortuary affairs, petroleum and water support, supply distribution management, subsistence, and logistics sustainment at the right time, place, and quantity to support Soldiers, their units, and systems across the entire spectrum of conflict. Functions include the following tasks:

(1) Command and control, manage, estimate, and supervise activities of Army and joint logistics units and organizations engaged in the requisition, receipt, storage, preservation, distribution and issue of equipment, repair parts, maps, fortification and construction materiel, subsistence, petroleum products, water, and other general supplies (excluding procurement of ammunition, medical, and the management of cryptographic material).

(2) Command and control, manage, supervise airdrop and airdrop equipment maintenance activities that store, repair,

maintain, distribute, and dispose of air items, pack parachutes, and prepare supplies for sling load or aerial delivery. Instruct and train personnel in airdrop procedures and equipment support techniques.

(3) Command and control, manage, and supervise the collection of salvage and/or abandoned property, unserviceable supplies and equipment, and dispose of such items through proper channels.

(4) Command units responsible for providing field service support, laundry and shower, mortuary affairs, aerial delivery, Army Exchange operations, and the renovation of clothing and textiles.

(5) Command and control, manage, and supervise subsistence operations including determination of requirements, procurement, distribution, storage, issue, nutrition, food preparation, service, sanitation, and accountability.

(6) Command and control, manage, and supervise petroleum operations including procurement and determination of bulk and packaged petroleum requirements, as well as the storage, distribution and quality assurance of all petroleum products to include the inland distribution of petroleum products for all services in a theater of operations.

(7) Command and control, manage, and supervise water operations including purification, storage and distribution of bulk and packaged water, plan consumption requirements, and establish water supply points.

(8) Command and control, manage, and supervise supply service support and other logistical matters.

(9) Command and control, manage, and supervise procedures to maintain necessary supply discipline to ensure maximum use of available assets.

(10) Command and control, manage, and supervise the coordinating and executing host nation support (HNS) for supplies, services, and facilities.

(11) Command and control, manage, and supervise the development of doctrine, organizations, training, materiel, leaders, personnel and facilities for the Quartermaster mission area.

(12) Command and control, manage, supervise, and instruct Quartermaster skills at service schools, service colleges, pre-commissioning programs and Combat Training Centers.

(13) Command and control, manage, and supervise as Quartermaster advisors to U.S. Army Reserve (USAR) and ARNG organizations. The USAR/ARNG officers also serve as liaisons to Army commands' Active Army organizations.

35-20. Officer characteristics required

a. Characteristics required of all officers. All officers are expected to possess base characteristics that will enable them to develop into agile and adaptive leaders for 21st century. Our leaders must be grounded in Army Values and the warrior ethos, competent in their core proficiencies, and broadly experienced to operate across the entire operational spectrum of conflict. They must be able to operate in Joint Interagency, Intergovernmental, Multinational (JIIM) environments and leverage capabilities beyond the Army in achieving their objectives. Quartermaster officers must be culturally astute and able to use their awareness and understanding to conduct operations innovatively and courageously to exploit opportunities in the challenges and complexities of the operational environment. Further explanation of these characteristics can be referenced in FM 3-0 and in chapter 3 of this publication.

b. Unique knowledge and skills of a Quartermaster officer. Quartermaster officers must be highly qualified, tactically and operationally oriented professionals who provide seamless logistical support in combat and other missions. Quartermaster officers must be warrior logisticians skilled in war-fighting tactics, techniques, and procedures; possess strong Army Values; and be technically competent in Quartermaster functions. They must be strong leaders with the skills and attributes necessary to assure success in a dynamic, complex and often hostile environment. Quartermaster officers are builders of leaders and teams focused on the profession of military logistics. A Quartermaster officer is a lifelong learner dedicated to obtaining and building throughout a career on the unique skills and knowledge of supply distribution, fuel, water, subsistence, aerial delivery, field services, and mortuary affairs. These functions set the foundation for the Quartermaster officer to build upon as they move from functional assignments to multifunctional assignments. Every officer learns and trains to be a well-rounded logistician, gaining expertise and experience in diverse specialties and skills. This section describes the skills, knowledge, and attributes required by the Quartermaster officer in order to successfully transition the Quartermaster officer to the Logistics branch after the Combined Logistics Captain Career Course (CLC3). All Quartermaster officer AOCs and the skill identifiers are open to male and female officers.

c. Unique skills. Quartermaster officers will serve in one of two AOCs and two skill identifiers (SI). Officers gain and develop these skills through multiple operational assignments and continuous professional study and self-development. Quartermaster officers often work in an environment where time available for problem analysis is seriously constrained but where sound timely decisions are urgent. Information gained in this environment will vary in its completeness and ambiguity. An ability to operate under stress, make decisions, and act in austere field conditions is critical to mission success. Quartermaster officers are functional, supply-oriented logisticians capable of developing their skills and experiences in the diverse profession of multifunctional military logistics. They support victory by living the Army Values and enforcing high standards of training, physical fitness, and discipline. They are war-fighters extremely well versed in doctrine. However, they are also adaptable to changing environments and can update logistics estimates and apply non-text book solutions to unique situations during full-spectrum operations. The dynamics associated with training and operational missions require a sense of ingenuity, foresight, stamina and sustained physical

endurance. These standards require officers to know and routinely execute drills and operate within established Standard Operating Procedures. Officers must meet certain requirements in terms of schooling and operational assignments to be proficient at each grade. These requirements are met through developmental assignments demonstrating the officer has the required skills, knowledge, and attributes in order to remain competitive for promotion. Each officer, with support from mentors, should develop career goals and clearly articulate those goals to their assignments officer at Army Human Resources Command (AHRC). Always remember that an officer is his or her own best career manager. By actively participating in the management of career decisions, officers will improve the likelihood of a successful career. Officers may use the Quartermaster branch training and development model (figure 35–13) as a guideline for maintaining functional expertise throughout their career.

(1) Quartermaster, Supply and Materiel Management (AOC 92A). The officer commands, directs, plans and implements multifunctional areas of materiel management and their integration into the overall DOD logistics system as well as support interface between the Army in the field, wholesale logistics and industry. Command, direct and/or exercises staff responsibility for units engaged in supply and service in the production, acquisition, receipt, storage and preservation, issue and distribution of equipment, repair parts, water and petroleum products (bulk and package), fortification/construction materiel to include tactical distribution of fuel, water and general supplies. Responsible for ensuring service support functions including, but not limited to, graves registration, clothing and textile renovation, laundry and bath and aerial delivery. Direct and supervise the collection, evacuation and accountability for all classes of supply classified as salvage, surplus, abandoned or uneconomically repairable. As a staff officer, advises the commander on matters regarding supply and services support as well as unit mission capabilities. As a materiel manager, develops, coordinates and supervises the supply support portion of integrated logistics support plans. Develop and execute materiel management programs, to include inventory control and distribution throughout the logistics system. Determine and plan for storage requirements for field and permanent depot activities to include location, site selection, site preparation, organization of the physical plant, employment of Material, Handling Equipment, utilization of personnel, packing and crating, physical security, humidity and vector control. As an Army exchange officer, develop plans and programs for current and future operations of installation exchanges and other sales outlets. Serve as a Regional Exchange Officer directing operations in overseas installations. Determine requirements for and plans the employment of aerial delivery systems in support of tactical and special operations.

(2) Petroleum and Water (AOC 92F). The officer commands, directs, plans, and/or exercises staff responsibility for units engaged in petroleum and/or water operations. Direct the acquisition, storage, inspection, testing, issue, and distribution of petroleum products, and water. Serve in staff positions requiring petroleum and water experience. Determine bulk and packaged petroleum products and water requirements, storage space requirements, distribution system requirements, and quality surveillance requirements. Recommend location of petroleum and water pipeline and hose-line routes, terminals, supply points, and depots; advises on water and bulk petroleum distribution system design. Direct the operations and user maintenance of water and petroleum pipelines, hose-lines, terminal, and dispensing systems. Plan, coordinate, and supervise loading and discharge of oceangoing tankers and other petroleum vessels. Perform and direct quality surveillance at point of procurement and throughout the petroleum distribution system. Direct the operations of base or mobile laboratories in testing of petroleum products. Supervise performance of standard physical and chemical tests, evaluates test results to insure products meet Federal and military specifications, and recommends disposition of off-specification or captured petroleum products. Determine water requirements, establish and direct operation of water purification, storage, distribution and issue systems in support of field operations. Develop, direct and coordinate water conservation programs when appropriate. Develop, direct, and coordinate unit procedures and programs on the environmentally sound handling of petroleum, wastewater, and water treatment chemicals. Monitor waste disposal procedures for waste produced by unit petroleum and water operations. Report all unit petroleum, wastewater, and water treatment chemical spills in accordance with applicable laws, regulations, and policies. Monitor unit spill containment a clean up operations. As an Army petroleum manager, direct storage, inspection, testing, issue and distribution of petroleum products and water. Determine bulk and packaged petroleum products and water requirements, storage space requirements, distribution system requirements, and quality surveillance. Direct preparation of reports and maintenance of petroleum accounting and distribution operations records. Establish and direct operations of water purification and petroleum storage, distribution, and issue systems in support of field operations.

(3) Aerial Delivery and Materiel (SI R9). The officer commands, directs, plans, and/or manages units engaged in storage, packing, preparation, and delivery of materiel by air drop means. Determine requirements for and plan the employment of aerial delivery systems in support of tactical and special operations. Command, direct, supervise, and train personnel engaged in the storage, packing, and preparation of materiel to be delivered by air; supply of aerial delivery equipment; and delivery of materiel by air. Plan and supervise the inspection, repair, testing, packing, rigging, and storage of parachutes, allied assemblies, aerial delivery containers, airdrop kits, cargo parachutes, and other airdrop retardation devices. Advise and assist in the coordination of transportation requirements to include recovery of airdrop equipment. Plan and supervise the inspection, repair, testing, packing, rigging, storage of parachutes, allied assemblies, aerial delivery containers, airdrop kits, cargo parachutes, and other airdrop retardation devices. Advise and assist in the coordination of transportation requirements to include recovery of airdrop equipment.

(4) Mortuary Affairs (SI 4V). The officer commands, directs, plans, and or manages mortuary affairs support

including search, recovery, tentative identification and evacuation of deceased personnel, collection, and disposition of personal effects of decedents.

35-21. Officer development

a. Officer Development Model. The Officer Development Model is focused more on the quality and range of experience, rather than the specific gates or assignments required to progress.

(1) Initial entry officers gain branch technical and tactical skills to develop a warrior ethos and gain important leadership experience in company grade assignments.

(2) Throughout an officer's career, the model highlights the need to gain JIIM experience and exposure.

(3) Functional designation at the 4th or 7th year develops both specific and broad functional competencies.

(4) Once an officer has received his or her functional designation they should strive for training and assignments that will broaden and develop the skills necessary to lead the Army of the future. These broadening opportunities are outside one's normal branch or functional area career development, and are JIIM in nature.

(5) Lifelong learning, supported by both civilian and military education, provides critical opportunities to develop both joint and expeditionary competencies. Expeditionary competencies are those needed by officers in an expeditionary force — regional knowledge, cultural awareness, foreign language, diplomacy, statesmanship, and so forth.

(6) Flexible time lines enable officers to serve longer in developmental assignments ensuring officers have adequate time to gain skills and experience and also support unit readiness and cohesion.

b. Lieutenant development. All officers accessed into the Quartermaster Corps are designated AOC 92A, Quartermaster, Supply and Materiel Management. Selected officers receive additional entry level training as a mortuary affairs officer (skill identifier 4V) and/or aerial delivery and materiel officer (skill identifier R9). By regulation, only QM officers possessing skill identifier R9 may fill parachute rigger positions.

(1) Education. To prepare newly commissioned Quartermaster officers to meet the challenge of their duties, lieutenants begin their formal military officer professional development training by attending the Basic Officer Leader Course (BOLC) II and III. The BOLC II students receive common core training designed to further develop them into competent small unit leaders with a common warfighting focus and warrior ethos. The BOLC III, conducted at Fort Lee, VA consists of Quartermaster Branch specific technical and tactical training in AOC 92A. The BOLC III functional training prepares Quartermaster lieutenants to function as platoon leaders capable of performing common Soldier skills and entry level technical tasks in technical supply, distribution, and materiel management; petroleum and water operations; subsistence management; general material management; and field services.

(2) Self-development. The Quartermaster Corps needs officers trained to perform duties in a wide range of areas. Accordingly, newly commissioned QM officers should actively pursue civilian and military professional development opportunities that enhance base level common core and functional logistics expertise. Officer Candidate School graduates must complete baccalaureate degree requirements prior to promotion to captain. Upon BOLC III completion, selected QM lieutenants may attend mortuary affairs officer (skill identifier 4V), aerial delivery and materiel officer (skill identifier R9) / Sling Load Certification functional courses. Others will have the opportunity to attend career enhancing Army training such as Airborne (skill identifier 5P), Ranger (skill identifier 5R or 5S), Air Assault (skill identifier 2B), and Pathfinder (skill identifier 5Q). QM officers must possess the airborne identifier prior to attending the aerial delivery and materiel officer course (ADMOC).

(3) Desired experience. Upon completion of entry level training, lieutenants are normally assigned to company level units in order to gain troop leading experience and to build a foundation from which to build one's career.

(a) Typical Quartermaster lieutenant assignments include:

1. Supply and Service Platoon Leader.
2. Aerial Delivery Platoon Leader.
3. Class I/Water Platoon Leader.
4. Class III/Petroleum Platoon Leader.
5. Technical Supply Officer.
6. Supply Management Officer.
7. Laundry and Bath Platoon Leader.
8. Mortuary Affairs Platoon Leader.

(b) Quartermaster lieutenants may also receive the opportunity to serve in the following assignments:

1. Battalion-level staff officer.
2. Detachment Commander.
3. Aide-de-camp.

c. Captain development. Upon promotion to captain and completion of the Combined Logistics Captain Career Course (CLC3). Quartermaster captains transition to Logistics Branch (90A) as their primary AOC with 92A becoming their secondary or functional specialty. Quartermaster captains selected to attend the Petroleum Officers Course will be awarded 92F (Petroleum Officer) as their primary AOC with 90A as their designated specialty. Logistics (LG) Branch

officers holding 92A/92F as a primary/secondary AOC will find themselves working in multifunctional and functional assignments based on their unit of assignment.

(1) Education. Upon promotion to or selection for captain, all officers attend CLC3 in order to prepare themselves for company level multifunctional logistics command, and to serve as battalion or brigade level staff officers. Some officers will attend specialized courses tied to their projected assignment. Others attend follow-on courses relating to various Quartermaster areas of concentrations and skill identifier such as the Petroleum/Water Management (AOC 92F), Aerial Delivery and Materiel Officer Course (skill identifier R9), and/or Mortuary Affairs (skill identifier 4V).

(2) KD assignments. Successful company command is the most critical QM captain key development assignment. Therefore, officers should aggressively seek company command prior to consideration for major.

(3) Developmental and broadening assignments. Typical captain developmental and broadening assignments include:

- (a) Company Command.
- (b) Petroleum Staff Officer (AOC 92F).
- (c) Battalion or Brigade Staff Officer.
- (d) Military Transition Team Officer.
- (e) Service School Instructor.
- (f) Supply and Service/Materiel Management Staff Officer.
- (g) Food Service Advisor.
- (h) Aerial Delivery Officer (SI R9).
- (i) Training With Industry Officer.
- (j) Mortuary Affairs Officer (SI 4V).
- (k) Aide-de-camp.
- (l) Training Center Observer/Controller.
- (m) Human Resource Command Career Manager.

(4) Self-development:

(a) Quartermaster captains have the opportunity to attend specialized career enhancing Army training such as Airborne (skill identifier 5P), Ranger (skill identifier 5R or 5S), Air Assault (skill identifier 2B), and Pathfinder (skill identifier 5Q).

(b) Upon successful completion of company command, Quartermaster captains will be afforded numerous opportunities for self-development to include:

- 1. Advanced civilian schooling/graduate degree.
- 2. Theater Logistics Studies Program (TLOG).
- 3. Support Operations Course.

(5) Desired experience: Quartermaster captains should have successfully completed company command, have at least one operational deployment, served on battalion and/or brigade level staff, and attended military and civilian education that builds on initial entry training and experience. Assignment history should have prepared the officer to serve in both multifunctional and functional positions at the field grade level.

d. *Major development.* Quartermaster majors continue development efforts through ILE, and key developmental assignments encompassing all aspects of multifunctional logistics as well as functional Quartermaster areas. Though not required, majors desiring to command Quartermaster functional battalion-level troop units should have previous Quartermaster Branch or functional assignment experience. Quartermaster majors should also seek JIIM assignments toward joint service qualification.

(1) Education. All QM majors must attend ILE prior to consideration for lieutenant colonel. The ILE is designed to prepare new field grade officers for their next 10 years of service in Army war fighting, joint, and expeditionary service. A few selected officers will attend the School of Advanced Military Studies (SAMS), a master's degree program aimed at producing operational and strategic level planners and critical thinkers.

(2) KD assignments. QM major key developmental assignments include the following positions:

- (a) QM Battalion Executive officer.
- (b) QM Battalion Support Operations officer.
- (c) QM Battalion Operations (S3) Officer.
- (d) Petroleum Operations Officer (AOC 92F).
- (e) QM Group S3.
- (f) QM Brigade or QM Group S4.
- (g) Division and Corps Parachute officer (SI R9).
- (h) Military Transition Team officer.
- (i) Brigade Logistics Support Team chief.

(3) Developmental and broadening assignments. Typical major developmental and broadening assignments include:

- (a) Joint Staff officer.
- (b) Brigade or higher staff officer.

(c) Joint area petroleum officer (AOC 92F). (Completion of a previously preferred assignment is required prior to assignment to this position.

(d) Division or higher Logistics planner (SAMS).

(e) Human Resource Command Career Manager.

(f) Service School Instructor.

(g) Training Center Observer/Controller.

(h) Other JIIM opportunities.

(4) Self-development. In addition to ILE and SAMS attendance, majors should seek out the following self-development opportunities:

(a) Advanced civilian schooling/graduate degree.

(b) Theater Logistics Studies Program (TLOG).

(c) Support Operations Course.

(d) Joint Forces Staff College (Joint Professional Military Education Level II).

(e) Joint Course on Logistics.

(f) International Society of Logistics Engineers (SOLE) Certified Professional Logistician Program.

(5) Desired experience. QM major key developmental and deployment experience, combined with advanced military and civilian education and joint duty experience, will have prepared the officer for lieutenant colonel and Army Centralized Selection List (CSL) Battalion Command/Key Billet opportunities.

e. Lieutenant colonel development. The vast majority of LTC positions are designated multifunctional. However, officers serving in primary AOC 92F and/or secondary AOC 92A may be assigned to functional Quartermaster command and staff positions. As with majors, Quartermaster lieutenant colonels should also seek JIIM assignments toward joint service qualification.

(1) Education. The QM lieutenant colonels should continue to seek educational opportunities that enhance battalion command potential, and multifunctional, functional and joint service experience. Selected QM lieutenant colonels will attend Senior Service College (SSC), senior professional military education and leader development training to prepare senior leaders to assume strategic leadership responsibilities in military or national security organizations. The QM lieutenant colonels selected for CSL Battalion Command/Key Billet positions will attend applicable Pre-Command Courses.

(2) Key developmental assignments. Successful CSL designated QM Battalion Command/Key Billet selection is the most critical lieutenant colonel KD assignment.

(3) Developmental and broadening assignments. Typical lieutenant colonel developmental and broadening assignments include:

(a) Division DCS, G-4.

(b) QM Brigade or group level Executive Officer/Deputy Commander.

(c) ESC/TSC functional staff officer (mortuary affairs officer, supply and service officer, and aerial delivery officer).

(d) Army or Joint Staff officer.

(e) Petroleum Officer (92F).

(f) Service School assignment.

(g) Senior Training Center Observer/Controller.

(h) Other JIIM Opportunities.

(4) Self-development. Self-development opportunities include nonresident SSC completion for those not selected for resident course attendance. Other educational opportunities include:

(a) Graduate degree.

(b) Joint Forces Staff College (Joint Professional Military Education Level II).

(c) Joint Course on Logistics.

(d) International Society of Logistics Engineers (SOLE) Certified Professional Logistician Program.

(5) Desired experience. The QM lieutenant colonels should successfully complete CSL Battalion Command/Key Billet assignment. This, combined with advanced military and civilian education and joint duty experience, will have prepared the officer for colonel and Army colonel Command Selection List/Key Billet opportunities.

f. Colonel development. The vast majority of colonel positions are designated multifunctional and joint duty. However, officers holding primary AOC 92F and/or secondary AOC 92A may be assigned to functional Quartermaster command and staff positions. The Quartermaster colonels should continue to seek JIIM assignments toward joint service qualification.

(1) Education. Selected QM colonels will attend Senior Service College (SSC), senior professional military education and leader development training to prepare senior leaders to assume strategic leadership responsibilities in military or national security organizations. QM colonels selected for CSL Brigade level Command/Key Billet positions will attend applicable Pre-Command Courses.

(2) KD assignments. Successful CSL designated QM Colonel Command/Key Billet selection is the most critical colonel key developmental assignment. Quartermaster Colonel CSL Commands/Key Billets include:

- (a) Commander, QM Group (92F).
- (b) Commander, Materiel Management Center.
- (c) Commander, Defense Distribution Center.
- (d) Commander, Defense Fuel Region (92F).
- (e) Commander, Army and Air Force Exchange Service.
- (3) Developmental and broadening assignments. Typical colonel developmental and broadening assignments include:
 - (a) Corps level DCS, G-4.
 - (b) ESC/TSC Level Executive Officer/Deputy Commander.
 - (c) Army or Joint Staff officer.
 - (d) Defense Logistics Agency/Army Materiel Command Staff officer.
 - (e) Petroleum officer (92F).
 - (f) Service School assignment.
 - (g) Other JIIM opportunities.

(4) Self-development. Self-development opportunities include nonresident SSC completion for those not selected for resident course attendance. Other educational opportunities include:

- (a) Graduate degree.
- (b) Joint Forces Staff College (Joint Professional Military Education Level II).
- (c) International Society of Logistics Engineers (SOLE) Certified Professional Logistician Program.

(5) Desired experience. The QM colonels must successfully complete CSL brigade level command/key billet assignment. This, combined with advanced military/civilian education and joint duty experience, will prepare the officer for general officer consideration.

35-22. Branch transfer

Officers (CPT through COL) desiring to branch transfer to the Logistics Branch must first hold a Quartermaster AOC. Officers may obtain a QM AOC through successful completion of a Quartermaster transition course (Support Operations, Reserve Component Multifunctional Combat Service Support, Logistics Executive Development, or Phase I of the Associate Logistics Executive Development Course). There is no requirement for captains through COL to branch transfer into the QM branch; all captains through COL are members of the logistics branch and not the specific functional branch (OD, QM, TC). Additionally, branch transfer is not open to lieutenants.

MANUAL OF
NAVY OFFICER
MANPOWER AND PERSONNEL
CLASSIFICATIONS



VOLUME I
Major Code Structures



OCT 2012

NAVPERS 15839I

SUPPLY AND FISCAL FIELD

1000-1999

This field includes classifications which identify billets with primary duties involving research, planning, administration, or performance in connection with budget preparation and control, the accounting and disbursing of funds, auditing, general procurement, transportation, subsistence and food service, and the storage and distribution of supplies.

MAJOR GROUPS

1000-1099 FISCAL

1100-1199 SUBSISTENCE, OPEN MESS AND BQ MANAGEMENT

1200-1299 TRANSPORTATION

1300-1399 MATERIAL DISTRIBUTION

1400-1499 PROCUREMENT

1500-1599 INVENTORY CONTROL

1900-1999 GENERAL

FISCAL GROUP

1000-1099

Classifications in this group identify primary duties associated with determination of fiscal requirements, accounting, disbursing, and budgeting.

1005 ACCOUNTING OFFICER [ACCT] [Job Code: 002592]

Directs accounting activities for control of funds and property in accordance with federal and naval accounting procedures. Plans and assigns work for account maintenance, reconciliation of accounts, preparation of payrolls and examination of vouchers. Applies accounting procedures to operation of accounting department. Records and controls commitment, obligation and expenditure of funds. Prepares reports of financial position. Conducts cost accounting and analysis.

Related Codes: NOBC - 1015, 1918; DOD Group - 7D Comptrollers and Fiscal

1015 INTERNAL REVIEW OFFICER [INTERNAL REV] [Job Code: 002595]

Administers and performs internal and contract auditing. Supervises appraisals of financial management, business activity and related operations within the Naval Establishment and inspection of records of contractors. Develops a fully documented appraisal and presents findings to all levels of management. Evaluates validity, reliability and results of internal controls and recommends appropriate action. Interprets or administers accounting procedures where costs are the basis for negotiation or reimbursement.

Related Codes: NOBC - 1005, 1050; DOD Group - 7D Comptrollers and Fiscal

1025 BUDGET OFFICER [BUDGET] [Job Code: 002597]

Plans and administers budget of naval activity. Secures budget requirements from operating units, analyzes estimates in accordance with prescribed policies, prepares activity budget estimates and justifications, and evaluates programs in terms of requests for appropriations. Establishes apportionments by projects or organization units. Conducts studies incident to obligation of appropriated funds. Interprets and prepares budgetary and fiscal legislation proposals. Controls obligations and expenditure of funds.

Related Codes: NOBC - 1050; DOD Group - 7D Comptrollers and Fiscal

1045 DISBURSING OFFICER [DISB] [Job Code: 002600]

Directs procurement, custody, transfer and issue of funds for payrolls and allowances. Issues savings bonds on payroll deductions. Prepares military pay records and makes payments to military and civilian payrolls. Prepares and pays public vouchers. Receives collections for credit to appropriations and other accounts. Maintains accountability for United States Treasury checks. Issues transportation requests. Prepares required financial returns and special reports. Assists in installation of new disbursing procedures.

Related Codes: NOBC - Any 10XX, 1918; DOD Group - 7D Comptrollers and Fiscal

1050 COMPTROLLER [COMPTROLLER] [Job Code: 002602]

Directs formulation, justification and administration of fiscal and budgetary management policies, plans and procedures. Determines budget and fiscal control policies. Coordinates and approves allocation of funds to programs and organizational units. Develops reports on status of appropriations. Provides required data on utilization of labor, material and commercial services. Prescribes required methods for budget estimation, fiscal administration, and accounting. Exercises internal control over these systems through administrative and internal activities.

Related Codes: NOBC - 1015, 1025; DOD Group - 7D Comptrollers and Fiscal

SUBSISTENCE, OPEN MESS AND BQ MANAGEMENT GROUP

1100-1199

Classifications in this group identify primary duties associated with establishment of food requirements, provisions management, control of daily rations, administration of Navy messes and Bachelor Quarters (BQ) management.

1105 MESS TREASURER/CATERER [MESSTRES/CATER] [Job Code: 002605]

Administers operation of officers' messes and recreational facilities. Directs purchase of resale merchandise, supplies and equipment for the mess. Directs preparation and serving of food and beverages. Maintains accounting control of all receipts and disbursements and prepares periodic financial statements. Controls the employment and discharge of employees paid from mess funds. Ensures that mess property is clean and properly safeguarded.

Related Codes: NOBC - 1130, 1918; DOD Group - 8E Food Service

1112 BACHELOR QUARTERS MANAGER [BQ MGR] [Job Code: 002607]

Operates and manages BQ and associated BEQ and BOQ billeting funds, carrying out applicable instructions. Prepares and executes budget for supplies and personnel support equipment (PSE). Acts as custodian of all nonappropriated billeting funds and the billeting funds property. Administers commercial contracts in BQ. Identifies overall BQ facility requirements. Operates a responsive resident relations program.

Related Codes: NOBC - 1105, 1130; DOD Group - 8G Supply, Procurement and Allied - Other

1130 FOOD SERVICE OFFICER [FOOD SVC] [Job Code: 002610]

Administers the operation of enlisted food service facilities. Directs requisitioning, care, storage and rotation of subsistence items. Directs requisitioning, care and use of all equipment located in food preparation and food service spaces. Establishes controls for the conservation, preparation and service of food items to ensure proper utilization. Inspects food preparation, food service and subsistence stowage spaces for compliance with sanitation and safe handling regulations. Develops subsistence phase of operational plans.

Related Codes: NOBC - NONE; DOD Group - 8E Food Service

TRANSPORTATION GROUP
1200-1299

Classifications in this group identify primary duties involving administration of shipping, travel of naval personnel, procurement and use of transportation facilities, traffic management, and freight and cargo dispatch and handling. Excluded from this group are classifications pertaining to port control and shipping operation which are included in the Shore Operations Group (9400-9499).

1205 AIR TRAFFIC OFFICER [AIR TRAF] [Job Code: 001005]

Plans and directs air carrier and air terminal passenger, cargo and mail traffic operations. Directs loading of traffic on military air transport. Exercises control of air traffic backlogs, including regular flights and special mission flights. Directs passenger service functions. Maintains liaison with local shippers to assure pickup, packing and delivery of air cargo. Aids in determination of routes, schedules and loading methods.

Related Codes: NOBC - NONE; DOD Group - 8C Transportation

1215 CARGO HANDLING OFFICER [CARGO HANDLING] [Job Code: 001010]

Plans, coordinates and directs cargo handling, shipping, and stowage operations, including combat troops and associated cargo in accordance with tactical requirements. Supervises preparation and distribution of shipping and handling documents and stowage plans. Controls and schedules cargo bookings, shipments, assembly, loading and unloading, and stowage. Schedules, controls and supervises cargo movement activities including stevedoring, mode of shipping and special handling. Issues directives and instructions regarding assembly, loading or unloading, placement and safety.

Related Codes: NOBC - NONE; DOD Group - 8C Transportation

1242 PASSENGER TRANSPORTATION OFFICER [PAX TRANS] [Job Code: 001013]

Plans and directs transportation of military and civilian personnel. Establishes overall procedures governing passenger operations. Directs procurement of travel reservations and issues travel requests, meal tickets and subsistence allowances. Maintains liaison with Armed Forces and commercial transportation agencies.

Related Codes: NOBC - NONE; DOD Group - 8C Transportation

1245 HOUSEHOLD GOODS OFFICER [HSHLD GOODS] [Job Code: 001015]

Provides for transportation of goods and effects of naval personnel. Advises on procedures and entitlement concerning customs duties, regulations on shipments of household goods, personal effects, automobiles, house trailers and prohibited articles. Determines methods of transporting shipments and schedules shipping dates. Arranges for packing, draying, unpacking, storage and inspection. Directs preparation of bills of lading. Assists in preparing claims for loss or damage, locating owners or determining proper disposition of unclaimed property.

Related Codes: NOBC - 1215; DOD Group - 8C Transportation

1272 TRANSPORTATION LOGISTICS OFFICER [TRANS LOG] [Job Code: 001018]

Plans and administers total transportation requirements for supply support. Determines requirements to support operational and strategic plans, ascertaining equipment, facilities and personnel required. Coordinates transportation plans concerning carrier operations, terminal management and shipping agencies. Establishes policies and plans for requirements, tonnage allocations, and utilization of airlift, sealift and land transportation. Prepares transportation annex to objective logistic plans. Represents Navy in transportation conferences to coordinate requirements and utilization of available transportation with DOD, other military and civilian activities.

Related Codes: NOBC - 1295, 1978, 9051; DOD Group - 8A Logistics, General

1295 TRANSPORTATION DIRECTOR [TRANS DIR] [Job Code: 001020]

Directs and coordinates planning, establishment of policies and administration of traffic, terminal and transportation carrier operations involving movement of Department of Defense property and/or personnel by sea, land and air. Directs acquisition and utilization of space on commercial carriers. Plans for emergency and mobilization use of military and commercial carriers. Maintains liaison with agencies concerned with transportation. Contracts for transportation services.

Related Codes: NOBC - 1272; DOD Group - 8C Transportation

MATERIAL DISTRIBUTION GROUP
1300-1399

Classifications in this group identify primary duties associated with the receipt, storage, issue, handling, packaging, and disposal of material and supplies.

1302 ISSUE CONTROL OFFICER [ISSUE CTL] [Job Code: 001023]

Directs issue of stocks to consuming activities. Processes issue documents and advises management of processing effectiveness. Provides special expediting services. Maintains control file of requisitions and issue documents. Serves as liaison between supply department and supported activities and ships. Initiates action to ensure procurement, assembly and reservation of material for new construction, conversion, overhaul, outfitting, or other special programs.

Related Codes: NOBC - 1345, 1530, 1913, 1918; DOD Group - 8B Supply

1306 MATERIAL DIVISION OFFICER [MTL DIV] [Job Code: 001025]

Directs or assists in the administration of the material division of a supply activity. Supervises all warehousing operations incident to the receipt, storage, issue and shipment of assigned materials. Establishes and maintains adequate controls which will assure effective and timely accomplishment of the material division mission.

Related Codes: NOBC - 1370, 1913, 1918; DOD Group - 8B Supply

1345 NAVAL SUPPLY CONTROL OFFICER [NAV SUP CTL] [Job Code: 001028]

Administers receipt and issue of Navy-furnished materials to private contractor or naval activity. Maintains records and systems to account for materials. Supervises storage, preservation and control of stock issues. Coordinates material delivery to needs of activity and may coordinate supply function with other departments of activity. Recommends stock levels, including shop stores.

Related Codes: NOBC - 1302, 1530, 1913, 1918; DOD Group - 8B Supply

1370 WAREHOUSE AND STORAGE OFFICER [WAREHS STOR] [Job Code: 001033]

Administers storage operations at a supply activity. Supervises material receipt into storage and issues from storage, maintenance of storage plan and locator system, care and maintenance of material in storage, security and fire protection, custodial storage, rewarehousing, physical inventories and shop store operations. Furnishes technical assistance and information on storage matters.

Related Codes: NOBC - 1918; DOD Group - 8B Supply

PROCUREMENT GROUP
1400-1499

Classifications in this group identify primary duties associated with purchasing, renting, leasing, or otherwise obtaining supplies and services, and include all phases of contract administration.

1476 PROCUREMENT MANAGEMENT OFFICER [PRCM MGT] [Job Code: 001036]

Manages one or more procurement functions at Departmental or other staff level. Establishes policies and procedures governing procurement and production of basic and processed materials, end products, components and services. Determines broad procurement objectives. Monitors contract administration, quality assurance and production surveillance. Evaluates contractor performance. Evaluates contractor business and financial operations, practices, policies and decisions to assess effects on contractor performance and costs to the Government. Directs all phases of the contracting process.

Related Codes: NOBC - 1480, 1485; DOD Group - 8D Procurement and Production

1480 PROCUREMENT CONTRACTING OFFICER [PRCM CONTRACT] [Job Code: 001038]

Contracts for all types of systems, equipments, supplies and services. Analyzes purchase requests. Determines prospective sources. Solicits bids, proposals, quotations and evaluates industry responses. Establishes negotiation objectives, obtains necessary clearances and conducts negotiations. Awards contracts and ensures that all contractual documentation complies with statutory and regulatory requirements.

Related Codes: NOBC - 1476, 1485; DOD Group - 8D Procurement and Production

1485 ADMINISTRATIVE CONTRACTING OFFICER [ADMIN CONTRACT] [Job Code: 001041]

Administers all types of contracts. Approves contractor's wage and salary schedules, requests for progress payments and accounting, estimating and purchasing systems. Grants subcontract and purchase order approval/consent. Determines allocability and allocability of costs. Manages inspection program, ensuring timely delivery of acceptable materials. Determines cause and responsibility for delays. Analyzes contractor's claims for adjustments. Prices out, negotiates and executes contract modifications. Negotiates overhead rates. Supervises compliance with property administration requirements and supervises enforcement of security requirements.

Related Codes: NOBC - 1476, 1480, 2165, 6914, 7996; DOD Group - 8D Procurement and Production

1490 CONTRACTING OFFICER (ENTRY LEVEL) [ACQ CONT ENTRY LVL] [Job Code: 002616]

Contracts for all types of systems, equipment, supplies and services. DoD Directive 5000.52, "Defense Acquisition Education, Training and Career Development Program" applies. This is the entry level NOBC in the Reserve Acquisition Career Field; it must be obtained prior to assignment to a designated contracting billet. Specific education and experience requirements are promulgated in the Defense Acquisition University (DAU) Catalog (<http://www.dau.mil/catalog>) Appendix B.

Related Codes: NOBC - 1491, 1492, 1493; DOD Group - 8D Procurement and Production

1491 CONTRACTING OFFICER (DAWIA LEVEL I) [ACQ CONT LVL I] [Job Code: 003159]

Contracts for all types of systems, equipment, supplies and services. DoD Directive 5000.52, "Defense Acquisition Education, Training and Career Development Program" applies. This NOBC will be earned upon meeting the DAWIA Level I in Contracts. Specific education, experience and training requirements are promulgated in the Defense Acquisition University (DAU) Catalog (<http://www.dau.mil/catalog>) Appendix B. Signed certification to DAWIA Level I in accordance with sample format provided in SECNAVINST 5300.36 (<http://www.acquisition.navy.mil/content/view/full/109>), Appendix K will be used to justify the qualification of individuals for this NOBC.

Related Codes: NOBC - 1490, 1492, 1493; DOD Group - 8D Procurement and Production

1492 CONTRACTING OFFICER (DAWIA LEVEL II) [ACQ CONT LVL II] [Job Code: 003500]

Contracts for all types of systems, equipment, supplies and services. DoD Directive 5000.52, "Defense Acquisition Education, Training and Career Development Program" applies. This NOBC will be earned upon meeting the DAWIA Level II in Contracts. Specific education, experience and training requirements are promulgated in the Defense Acquisition University (DAU) Catalog (<http://www.dau.mil/catalog>) Appendix B. Signed certification to DAWIA Level II in accordance with sample format provided in SECNAVINST 5300.36 (<http://www.acquisition.navy.mil/content/view/full/109>), Appendix K will be used to justify the qualification of individuals for this NOBC.

Related Codes: NOBC - 1490, 1491, 1493; DOD Group - 8D Procurement and Production

1493 CONTRACTING OFFICER (DAWIA LEVEL III) [ACQ CONT LVL III] [Job Code: 003659]

Contracts for all types of systems, equipment, supplies and services. DoD Directive 5000.52, "Defense Acquisition Education, Training and Career Development Program" applies. This NOBC will be earned upon meeting the DAWIA Level III in Contracts. Specific education, experience and training requirements are promulgated in the Defense Acquisition University (DAU) Catalog (<http://www.dau.mil/catalog>) Appendix B. Signed certification to DAWIA Level III in accordance with sample format provided in SECNAVINST 5300.36 (<http://www.acquisition.navy.mil/content/view/full/109>), Appendix K will be used to justify the qualification of individuals for this NOBC.

Related Codes: NOBC - 1490, 1491, 1492; DOD Group - 8D Procurement and Production

INVENTORY CONTROL GROUP
1500-1599

Classifications in this group identify primary duties associated with inventory control methods, financing, and stock maintenance.

1515 INVENTORY CONTROL METHODS OFFICER [INV CTL MTHD] [Job Code: 001043]

Formulates and promulgates procedures for inventory control phase of Navy distribution system. Establishes and maintains information on levels of supply required. Devises and installs stock status reporting systems. Assembles, compiles and analyzes usage and inventory data. Recommends identification and cataloging patterns from standpoint of inventory control requirements. Assists material bureaus and commands with inventory control problems.

Related Codes: NOBC - 1345, 1530, 1976, 1990; DOD Group - 8B Supply

1530 STOCK CONTROL OFFICER, REQUIREMENTS [STK CTL RQMT] [Job Code: 001046]

Directs maintenance of stocks of materials in prescribed quantities and types. Supervises stock accounting system required to record and report stock status, implementing inventory control methods, directing pricing of stock and maintenance of stock class ledgers and balance sheets. Initiates action for procurement, distribution and disposition of material. Analyzes requirements in light of usage, allowance and allocations, recommending modifications in stock level.

Related Codes: NOBC - 1302, 1913, 1918, 1990, 1991; DOD Group - 8B Supply

GENERAL GROUP (SUPPLY AND FISCAL FIELD)
1900-1999

Classifications in this group identify primary duties associated with general supply administration and with supply and fiscal duties not specifically identified in another group.

1913 STORES OFFICER [STORES] [Job Code: 001048]

Assists supply officer by organizing and administering supply and issue of stores. Establishes low and high limits of stock of consumable supplies and repair parts. Installs and supervises control systems. Initiates requisitions. Prepares custody cards, stock tallies and summaries. Authorizes issue of stores. Prepares returns covering all stores transactions and stock and money status reports.

Related Codes: NOBC - 1302, 1530, 1918, 1935; DOD Group - 8B Supply

1918 GENERAL SUPPLY OFFICER [GEN SUP] [Job Code: 001051]

Directs supply department activities. Applies supply policies to operation of department. Determines demand in accordance with mission and standard allowance lists. Approves requisitions, balance sheets and summaries. Directs receiving, storage, inventory control, issue and salvage of material. Oversees procurement and sale of goods and services. Administers operation of general mess, including procurement, storage, issue and inventory of provisions. Conducts disbursing activities in connection with property accountability and transfer, payroll and personal accounts.

Related Codes: NOBC - 1005, 1045, 1306, 1913, 1935, 1955; DOD Group - 8B Supply

1920 EQUIPMENT PROGRAM SUPPORT OFFICER [EQ PGM SUP] [Job Code: 001053]

Directs and administers program for material support of equipment operation and overhaul. Determines items required for support of operations. Develops requisite inputs for the preparation of allowance lists, and maintains allowance lists in current status. Manages and directs acquisition, distribution, redistribution, overhaul and disposal of material. Prepares item identification. Determines interchangeability and the appropriate material manager in the Navy supply system. Prepares budget estimates.

Related Codes: NOBC - 1918, 1978, 1990; DOD Group - 8B Supply

1935 SHIPS STORE OFFICER [SHIP STO] [Job Code: 001060]

Administers the ships store operation. Directs the procurement, receipt, storage, issue, display and sale of ships store merchandise and standard Navy clothing. Operates sales outlets and service activities. As accountable officer, maintains related records, prepares required financial returns, reports and correspondence.

Related Codes: NOBC - 1913, 1918; DOD Group 8F Exchange and Commissary

1940 FUEL LOGISTICS PLANNING OFFICER [FUEL LOG PLN] [Job Code: 001063]

Plans and directs fuel logistics operations in support of strategic and operational plans. Establishes planning guidelines and objectives. Coordinates and directs determination of requirements to support logistic objectives. Evaluates logistics feasibility of strategic and operational plans, directing execution of logistics plans. Directs programs to improve logistics capabilities. Directs or participates in development of all military logistics plans. Participates in planning and controlling allocation of fuels for civilian and military use.

Related Codes: NOBC - 1946; DOD Group - 8A Logistics, General

1946 FUEL DEPOT OFFICER [FUEL DEPOT] [Job Code: 001065]

Plans, supervises and coordinates action and functions concerned with receipt, storage, issue and distribution of fuels to meet operational needs. Directs, coordinates and supervises administration and maintenance of depot facility. Directs and conducts tests and inspections, supervising maintenance of prescribed quality control programs.

Related Codes: NOBC - 1940; DOD Group - 8B Supply

1955 STAFF SUPPLY OFFICER [STF SUP] [Job Code: 001068]

Advises and assists command by administering supply activities. Initiates correspondence concerning supply policy. Directs extension or consolidation of supply activities. Implements directives, regulations and instructions. Maintains liaison with Naval Supply Systems Command. Plans and coordinates supply functions. Advises on adequacy of facilities. Administers rationing programs for command activities. Plans inspection programs.

Related Codes: NOBC - 1918, 1976, 1978, 1984; DOD Group - 8B Supply

1976 SUPPLY FIELD SERVICES OFFICER [SUP FLD SVC] [Job Code: 001070]

Directs activities of field supply establishments for purposes of centralized control. Analyzes and recommends corrective action on reports of performance, inspection and operation of field activities. Develops and maintains standard systems throughout supply activities for operation and maintenance. Reviews requests for funds and personnel, recommending allocations and ceilings for field establishment. Assists field supply commands with technical, administrative and fiscal problems, interpreting naval supply policies.

Related Codes: NOBC - 1918, 1955; DOD Group - 8B Supply

1978 SUPPLY LOGISTICS OFFICER [SUP LOG] [Job Code: 001073]

Plans or directs supply, storage and issue of materials in direct support of operations. Develops plans and procedures to meet supply requirements in coordination with operational plans. Collects data, evaluates and establishes items of stock. Develops programs for supply facilities such as utilization of storage space. Coordinates efforts of regular supply activities in support of logistic plans. Conducts logistics research. Maintains statistical and other data. Develops and distributes publications.

Related Codes: NOBC - 1272, 1940, 1984; DOD Group - 8A Logistics, General

1984 SUPPLY PLANS OFFICER [SUP PLN] [Job Code: 001075]

Plans and advises command on supply activity programs. Administers management programs and provides for supply support of operational plans. Studies supply problems and recommends corrective programs and policies. Coordinates policies and procedures through contacts with other activities and services. Participates in planning studies. Administers and coordinates mobilization and readiness planning and plans. Formulates and administers internal activity budget. Establishes management analysis and control systems required for evaluating and reporting progress toward objectives.

Related Codes: NOBC - 1295, 1476, 1918, 1978; DOD Group - 8B Supply

1990 TECHNICAL SUPPLY OFFICER (GENERAL) [TSO GEN] [Job Code: 001078]

Supervises receipt, storage and issue of types of technical supplies, spare parts and equipment. Establishes stocks based on allowance lists and operational requirements. Supervises receipt of stocks in accordance with prescribed procedures, maintaining inventory control systems. Controls issue and packaging of material. Recommends substitutes and provides for accounting of issued material. Directs storage of materials, establishing preservation and maintenance tests.

Related Codes: NOBC - 1991; DOD Group - 8B Supply

1991 TECHNICAL SUPPLY OFFICER (AVIATION) [TSO AV] [Job Code: 001080]

(For definition, see NOBC 1990)

Related Codes: NOBC - 1990; DOD Group - 8B Supply

*****AMDOs not classified as Navy Logisticians, but included for comparison*****

AVIATION ENGINEERING (MAINTENANCE AND REWORK) GROUP

8100-8199

Classifications in this group identify primary duties involving planning, administration, and direction of depot, intermediate, and organizational maintenance of naval aircraft, components, parts, and support equipment.

8112 AVIATION MAINTENANCE FIELD REPRESENTATIVE [AV MNT FLD REP] [Job Code: 001780]

Visits aircraft activities for purpose of assisting in solution of maintenance problems encountered with naval aircraft. Demonstrates to maintenance personnel proper techniques and use of new or special equipment to improve maintenance. Disseminates technical information. Advises on proper preparation of reports. Assists and advises in obtaining aircraft material, equipment and technical publications. Submits technical reports to Naval Air Systems Command whenever difficulty is encountered which warrants further information, investigation, or action.

Related Codes: NOBC - 8116, 8118; DOD Group - 4D Aviation Maintenance and Allied

8115 AVIATION MAINTENANCE MANAGEMENT ENGINEER [AV MNT MGT ENG] [Job Code: 001783]

Develops and coordinates studies to achieve maximum utilization of manpower, material and facilities within the maintenance division. Directs studies for developing uniform production controls, work simplification and work measurement for field programs. Develops uniform organization structures and administrative procedures. Studies uniform means for obtaining, analyzing and utilizing accounting and statistical data. Maintains liaison with management engineering groups of the Navy and other activities to obtain information concerning new developments and techniques.

Related Codes: NOBC - 2160, 8177; DOD Group - 7A Administrators, General

8116 AVIATION MAINTENANCE PLANNING OFFICER [AV MNT PLN] [Job Code: 001785]

Directs and supervises planning for establishment of airframe and engine maintenance requirements. Establishes number and type of aircraft to be overhauled. Determines requirements for new spare engines to support approved aircraft program. Directs movement of aircraft from operating commands to overhaul and repair departments or storage pools and return to operating commands. Schedules ferrying of aircraft and maintains progress reports of such movements. Maintains records of location and status of aircraft.

Related Codes: NOBC - 8175, 8176; DOD Group - 4D Aviation Maintenance and Allied

8118 AVIATION MAINTENANCE ENGINEERING OFFICER [AV MNT ENG] [Job Code: 001788]

Establishes technical procedures needed to maintain aircraft, aviation equipment and accessories. Investigates and takes corrective action on reports of unsatisfactory material. Recommends changes in design features affecting equipment maintenance. Issues technical bulletins and modification instructions. Determines requirements and reviews for accuracy technical handbooks, including service and parts sections. Selects special tool and test equipment items required for line maintenance and overhaul of aircraft equipment.

Related Codes: NOBC - 8152; DOD Group - 4D Aviation Maintenance and Allied

8125 AVIATION OVERHAUL SCHEDULES OFFICER [AV OVHL SKED] [Job Code: 001790]

Schedules overhaul, repair and modification of aircraft, engines and aviation equipment. Distributes aircraft overhaul assignments to various industrial establishments on basis of geographical location, home base of squadron, local labor conditions and transportation facilities. Checks field activities' overhaul schedules for conformance to overall maintenance program and policies. Ensures availability of adequate facilities and personnel to accomplish assigned schedule.

Related Codes: NOBC - 8175, 8176; DOD Group - 4D Aviation Maintenance and Allied

8141 DEPOT MAINTENANCE ENGINEERING AND QUALITY OFFICER [D/MNT ENG/QUAL] [Job Code: 001793]

Directs engineering services for Naval Air Rework Facility, ensuring economy of operation and quality of end product. Establishes engineering specifications for processing items in production shops. Interprets and supplements rework specifications supplied by systems command. Prepares and interprets test specifications and limits of performance and calibration for operating, test and standards equipment. Develops and implements quality control procedures and systems. Ensures conformance to quality standards. Furnishes functional guidance and technical services to elements which plan/perform work to design and quality specifications.

Related Codes: NOBC - 8112, 8116, 8118, 8177; DOD Group - 4D Aviation Maintenance and Allied

8152 DEPOT MAINTENANCE PRODUCTION OFFICER [D/MNT PROD] [Job Code: 001795]

Administers planning, scheduling and accomplishment of depot maintenance workload. Directs rework operations on designated weapons systems, accessories and equipment. Directs the manufacture of required aircraft parts and assemblies. Ensures effectiveness of production operations. Provides engineering services in support of production operations.

Related Codes: NOBC - 8112, 8125, 8141; DOD Group - 4D Aviation Maintenance and Allied

8175 AIRCRAFT INTERMEDIATE MAINTENANCE/MATERIAL CONTROL OFFICER [A/C IMNT/MTL] [Job Code: 001798]

Plans, coordinates and manages aircraft intermediate maintenance workload. Controls activities of production divisions. Monitors workload priorities and assigns completion times for check, test, repair, update/modification, calibration/qualification and overhaul of aircraft engines, airframe systems, avionics systems, aviator's survival systems and general/special aviation maintenance support equipment and associated components. Provides technical assistance to supported activities. Ensures technical compliance with established maintenance policies. Requisitions required material.

Related Codes: NOBC - 8176, 8189, 8925; DOD Group - 4D Aviation Maintenance and Allied

8176 AIRCRAFT ORGANIZATIONAL MAINTENANCE/MATERIAL CONTROL OFFICER [A/C OMNT/MTL] [Job Code: 001803]

Plans, coordinates and manages organizational level aircraft maintenance workload. Controls activities of production divisions/branches. Prepares schedules and man-hour estimates for periodic maintenance of aircraft engines, airframes, avionics, weapons, components and support equipment. Assigns job priorities and completion times for unscheduled maintenance actions, technical directive compliance and conditional aircraft inspection requirements ensuring compliance with established maintenance policies. Maintains aircraft, inventory, engine and accessory logs/records and current maintenance index. Maintains liaison with supporting activities. Requisitions required material.

Related Codes: NOBC - 8175, 8190, 8925; DOD Group - 4D Aviation Maintenance and Allied

8177 AIRCRAFT MAINTENANCE QUALITY CONTROL OFFICER [A/C MNT QC] [Job Code: 001808]

Administers aircraft maintenance quality control program. Monitors maintenance and repair inspection procedures and standards. Ensures conformance of work accomplished to established standards and safety-of-flight requirements and compliance with calibration and safety instructions. Determines applicability of technical publications and directives to quality control. Identifies discrepancies and takes appropriate action. Performs or directs inspections of maintenance and repair work accomplished, equipment used and ready-for-issue material and spares. Maintains master technical library.

Related Codes: NOBC - 8141; DOD Group - 4D Aviation Maintenance and Allied

8180 AIR WING MAINTENANCE OFFICER [AIR WING MNT] [Job Code: 001811]

Coordinates aircraft maintenance performed by and in support of squadrons and units under the cognizance of the Wing Commander. Provides liaison between squadrons, ships and stations in connection with maintenance matters. Manages and operates Wing maintenance control center in Flight Deck Control when embarked.

Related Codes: NOBC - 8189, 8190; DOD Group - 4D Aviation Maintenance and Allied

8189 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, GENERAL [A/C IMNT GEN] [Job Code: 001813]

Administers and supervises intermediate level maintenance program in accordance with controlling directives from higher authority. Supervises intermediate level maintenance, including calibration, repair or replacement of damaged or unserviceable parts, components, or assemblies and manufacture of unavailable parts. Promotes improvements in policy direction, technical supervision and management control of programs affecting aircraft maintenance activities.

Related Codes: NOBC - 8175, 8177, 8190-8195; DOD Group - 4D Aviation Maintenance and Allied

8190 AIRCRAFT ORGANIZATIONAL MAINTENANCE OFFICER, GENERAL [A/C OMNT GEN] [Job Code: 001816]

Administers and supervises organizational level maintenance program in accordance with controlling directives from higher authority. Supervises organization level maintenance, including inspection, servicing, lubricating, adjusting and replacement of parts, minor assemblies and subassemblies. Promotes improvements in policy direction, technical supervision and management control of programs affecting aircraft maintenance activities.

Related Codes: NOBC - 8176, 8196, 8197, 8199; DOD Group - 4D Aviation Maintenance and Allied

8191 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, POWERPLANTS [A/C IMNT PWRPL] [Job Code: 001818]

Performs intermediate level maintenance functions, as indicated in NOBC 8189, in the area of aircraft powerplants, powerplant components, accessories and related systems including but not limited to engines, propellers, cooling systems, fuel tanks, rotor systems and components.

Related Codes: NOBC - 8189, 8190, 8197; DOD Group - 4D Aviation Maintenance and Allied

8192 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, AIRFRAMES [A/C IMNT A/F] [Job Code: 001821]

Performs intermediate level maintenance functions, as indicated in NOBC 8189, in the area of air-frame systems and components (except missiles) such as fuselage, wings, fixed surfaces, movable surfaces, cargo hoists, landing gear, hydraulic, pneumatic and utility systems and components.

Related Codes: NOBC - 8002, 8175, 8189, 8197; DOD Group - 4D Aviation Maintenance and Allied

8193 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, ARMAMENT EQUIPMENT [A/C IMNT ARMEQ] [Job Code: 001823]

Performs intermediate level maintenance functions, as indicated in NOBC 8189, in the area of aircraft weapons systems and components including bombing, gunnery and rocket equipment, sights, bomb racks and launchers, air compressors (armament only), gunfire interrupters and switches, gun cameras, solenoids, switches, transformers, heaters, ammunition containers, bomb release units, door timers, latches, operating mechanisms, warning lights, munitions hoisting and loading equipment, gun charging units, pyrotechnic ejectors and launchers, jet-assisted take-off units and installed tow target equipment.

Related Codes: NOBC - 8189, 8199; DOD Group - 4D Aviation Maintenance and Allied

8195 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, SUPPORT EQUIPMENT [A/C IMNT SUPEQ] [Job Code: 001826]

Performs intermediate level maintenance functions, as indicated in NOBC 8189, in the area of aircraft maintenance support equipment such as gasoline, electric and diesel powered servicing equipment, gas turbine powered servicing equipment, trailers, dollies and carts (nonpowered) and mechanical support equipment.

Related Codes: NOBC - 8004, 8074, 8189, 8196; DOD Group - 4D Aviation Maintenance and Allied

8196 AIRCRAFT ORGANIZATIONAL MAINTENANCE OFFICER, LINE DIVISION [A/C OMNT LINE]
[Job Code: 001828]

Performs organizational level maintenance functions, as indicated in NOBC 8190, in the line division. Supervises and assigns plane captains, troubleshooters and ground support equipment maintenance personnel in preoperation, postoperation and daily inspections, servicing and maintenance of assigned aircraft and support equipment.

Related Codes: NOBC - 8176, 8190, 8638; DOD Group - 4D Aviation Maintenance and Allied

8197 AIRCRAFT ORGANIZATIONAL MAINTENANCE OFFICER, AIRCRAFT DIVISION [A/C OMNT A/C]
[Job Code: 001831]

Performs organizational level maintenance functions, as indicated in NOBC 8190, in the aircraft division. Supervises the inspection, removal, functional test and adjustment and installation of components in such areas as powerplants, airframes and aviator's equipment. Directs the supervision, coordination and completion of periodic maintenance and inspections of assigned aircraft conducted in the maintenance production divisions.

Related Codes: NOBC - 8191, 8192, 8625, 8638; DOD Group - 4D Aviation Maintenance and Allied

8198 AIRCRAFT INTERMEDIATE MAINTENANCE OFFICER, AVIONICS [A/C IMNT AV] [Job Code: 001837]

Performs intermediate level maintenance functions, as indicated in NOBC 8189, in the area of aircraft electrical and electronics systems, including radio, radar, navigation, recognition (IFF), aircraft power generation and distribution, lighting and instrumentation, electronic fire control and bombing, sonar, magnetic detection, electronic countermeasures and related systems and avionics support equipment.

Related Codes: NOBC - 5977, 8189, 8199; DOD Group - 4D Aviation Maintenance and Allied

8199 AIRCRAFT ORGANIZATIONAL MAINTENANCE OFFICER, AVIONICS/WEAPONS DIVISION
[A/C OMNT AV/WP] [Job Code: 001840]

Performs organizational level maintenance functions, as indicated in NOBC 8190, in the Avionics/Weapons Division. Supervises the inspection, removal, functional test and adjustment and installation of components in such areas as electronics, electrical, instrument, weapons, reconnaissance and photographic. Oversees the conduct of periodic maintenance of assigned aircraft in appropriate areas of responsibility.

Related Codes: NOBC - 8190, 8193, 8198; DOD Group - 4D Aviation Maintenance and Allied

Appendix D. Marine Corps Logistics Officer Description



DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
3000 MARINE CORPS PENTAGON
WASHINGTON, D.C. 20350-3000

MCO 1200.17D
C 465
25 JUN 2012

MARINE CORPS ORDER 1200.17D

From: Commandant of the Marine Corps
To: Distribution List

Subj: MILITARY OCCUPATIONAL SPECIALTIES MANUAL (SHORT TITLE: MOS MANUAL)

14. MOS 8040, Colonel, Logistician (I) PMOS

a. Summary. Colonels, Logisticians are logistics officers in the grade of colonel. This title and MOS will be used to identify colonel logistics billets in T/Os.

b. Prerequisites. See requirements.

c. Requirements

(1) Unrestricted officers holding a primary MOS from combat service support OccFld 04, 13, 30, 60, or 66 will be assigned an MOS -8040 upon promotion to the grade of colonel.

(2) Unrestricted officers holding a primary MOS listed above that were promoted to colonel prior to FY86 and subsequently assigned a MOS other than 8040 can request re-designation to 8040 or hold current designation until attrition.

(3) Unrestricted officers, upon promotion to the grade of colonel, with logistic expertise, experience, and knowledge, and holding primary MOSs other than those listed above, may request assignment of MOS 8040. Request for assignment of MOS 8040 will be addressed to the CMC (M) and will be submitted for review by a-board convened by the CMC (L).

d. Duties. As assigned.

e. Related Standard Occupational Classification (SOC) Title and Code. Logisticians 13-1081.

f. Related Military Skill. None.

1107. OCCUPATIONAL FIELD 04, LOGISTICS

1. MOS 0402, Logistics Officer (I) (LtCol to 2ndLt) PMOS

a. Summary. Logistics Officers plan, coordinate, execute and/or supervise the execution of all logistics functions and the six functional areas of tactical logistics: supply, maintenance, transportation, general engineering, health services, and services. Logistics officers serve as commanders or assistants to the commanders of tactical logistics units/elements and as members of general or executive staffs in the operating forces, supporting establishment, and joint staffs. They perform duties of mobility officer, maintenance management officer, motor transport officer, landing support officers, and are responsible for administrative and tactical unit movement of personnel, supplies, and equipment by all modes of transportation.

b. Prerequisites. See requirements.

c. Requirements. Complete the Logistics Officer Course, Logistics Operations School, Marine Corps Combat Service Support Schools, Camp Johnson/Camp Lejeune, NC.

d. Duties. For a complete listing of duties and tasks, refer to reference (h), Logistics Training and Readiness Manual.

e. Related Standard Occupational Classification (SOC) Title and Code. Logisticians 13-1081.

f. Related Military Skill. None.

1113. OCCUPATIONAL FIELD 13, ENGINEER, CONSTRUCTION, FACILITIES, AND EQUIPMENT

1. MOS 1302, Combat Engineer Officer (I) (LtCol to 2nd Lt) PMOS

a. Summary. Engineer Officers command or assist in commanding engineer units consisting of Marines in various MOSs whose duties include: repair, maintenance and operation of heavy equipment; engineer reconnaissance; obstacle system emplacement; breaching operations, to include reducing explosive hazards; mine/countermine operations; employment of demolitions and explosives; urban breaching; route clearance operations; assault, tactical and non-standard bridging; design, construction and maintenance of combat roads and trails; design and construction of expedient roads, airfields and landing zones; design and construction of survivability positions; expedient horizontal and vertical construction; and design, construction and maintenance of base camps/forward operating bases and combat outposts; storage and dispensing of bulk fuel products; and the installation, operation and maintenance of tactical utility systems.

b. Prerequisites. See requirements.

c. Requirements

(1) Complete the Combat Engineer Officer Course, Marine Corps Engineer School, MCB Camp Lejeune, NC.

(2) Skill progression schools/courses recommended for engineer officers include:

(a) Weapons and Tactics Instructor Course (WTI), taught by Marine Aviation Weapons and Tactics Squadron 1, Yuma, AZ (recommended for all engineer officers serving in the ACE).

(b) Marine Corps Logistics Education Program (MCLEP), taught by School of MAGTF Logistics and Penn State; State College, PA.

(c) Joint Engineer Operations Course, Ft Leonard Wood, MO.

d. Duties. For a complete listing of duties and tasks, refer to reference (n), Engineer and Utilities Training and Readiness Manual.

e. Related Standard Occupational Classification (SOC) Title and Code

(1) Construction Managers 11-9021.

(2) Engineer Managers 11-9041.

(3) Military Officer Special and Tactical Operations Leaders/Managers, All Other 55-1019.

(4) First-Line Supervisors/Managers of Transportation and Material-Moving Machine and Vehicle Operators 53-1031.

(5) First-Line Supervisors/Managers of Construction Trades and Extraction Workers 47-1011.

(6) Explosives Workers, Ordnance Handling Experts, and Blasters 47-5031.

(7) First-Line Supervisors/Managers of Mechanics, Installers, and Repairers 49-1011.

f. Related Military Skill. None.

1120. OCCUPATIONAL FIELD 30, SUPPLY ADMINISTRATION AND OPERATIONS

1. MOS 3002, Ground Supply Officer (I) (LtCol to 2ndLt) PMOS

a. Summary. Ground Supply Officers supervise and coordinate supply operations and related functions of a supply activity, unit, base, or station, including operating forces and shore station organizations. Ground supply officers may direct the activities of a maintenance distribution or industrial type organization, and they command or serve in either an operating forces service unit or a non-operating forces activity. Ground supply officers supervise the execution of policies and procedures pertaining to procurement, receipt, accounting, repair, storage, distribution, issue, disposal, computation, and maintenance of stock levels. They supervise transportation of supplies and equipment, and the collection, safeguarding, and transmittal of public funds; participate in the budget process and administration and expenditure of allotted funds; and make necessary recommendations to the commanding officer.

b. Prerequisites. See requirements.

c. Requirements. Complete the Ground Supply Officer Course, MCB, Camp Lejeune, NC.

d. Duties. For a complete listing of duties and tasks, refer to reference (t), Supply Administration and Operations Training and Readiness Manual.

e. Related Standard Occupational Classification (SOC) Title and Code

(1) Purchasing Managers 11-3061.

(2) Transportation, Storage, and Distribution Managers 11-3071.

f. Related Military Skill

1134. OCCUPATIONAL FIELD 60, AIRCRAFT MAINTENANCE

1. MOS 6002, Aircraft Maintenance Officer (I) (LtCol to 2ndLt) PMOS

a. Summary. Aircraft Maintenance Officers (AMOs) supervise and coordinate aircraft maintenance and repair activities. To be effective, 6002 AMOs must possess a detailed, working knowledge of all Navy-sponsored aviation maintenance programs and processes governed by CNAFINST 4790.2 series. MOS 6002 AMOs are different from MOS 6004, Aircraft Maintenance Engineer Officers in that they are unrestricted officers whose career paths can lead to the command of a Marine Aviation Logistics Squadron (MALS) or to designation as an Acquisition Professional.

b. Prerequisites. See requirements.

c. Requirements

(1) Officers completing the AMO long course at NAS Pensacola, FL will be awarded MOS 6002.

(2) Officers who complete the AMO short course at NAS Pensacola, FL, perform at least six months of on the job training in an aircraft maintenance billet, and are recommended by their command may be awarded an additional MOS of 6002.

d. Duties

(1) Organizes and supervises the maintenance and repair of aircraft, aircraft components, and aviation support equipment.

(2) Supervises the scheduling of aircraft for inspection.

(3) Informs commanding officers of work progress and advises them on matters pertaining to aircraft maintenance.

(4) Ensures the material condition and mission capability of the weapon systems and the collection and dissemination of maintenance management information.

(5) Directs technical training and establishes safety programs for maintenance personnel.

(6) Establishes maintenance procedures and assigns personnel to key billets.

(7) Directs and monitors requisitioning, receipt, and allocations of materials and tools.

e. Related Standard Occupational Classification (SOC) Title and Code. First-Line Supervisors/Managers of Mechanics, Installers, and Repairers 49-1011.

f. Related Military Skill. None.

1137. OCCUPATIONAL FIELD 66, AVIATION LOGISTICS

1. MOS 6602, Aviation Supply Officer (I) (LtCol to 2ndLt) PMOS

a. Summary. Aviation Supply Officers are unrestricted officers who may command, or assist in commanding a Marine Aviation Logistics Squadron. Aviation supply officers may also achieve designation as an Acquisition Professional. Aviation supply officers are responsible for planning, directing, and controlling the performance and execution of aviation supply functions within Marine Aircraft Wings, Marine Aviation Logistics Squadrons, Marine Corps Air Stations, CVs and LHAs, and various TYCOM and SYSCOM staffs. This requires in-depth familiarity and working knowledge sufficient to supervise and control Navy-developed and sponsored aviation logistics information management systems; repairable material management programs; financial management programs; budgeting and accounting functions; aviation inventory management functions; and warehousing operations. Aviation Supply Officers must ensure that aviation supply operations sustain the unit's combat readiness and enhance its ability to perform its mission. They must be able to establish division and department goals and to develop and execute plans to achieve those goals. They must monitor supply management indicators to assist in tracking performance over time and ensure progress towards accomplishment of established goals. Aviation supply officers must initiate and maintain liaison with external agencies to provide or obtain support and to report supply management indicators. They must also initiate and maintain liaison with maintenance personnel in the operational squadrons and the Intermediate Maintenance Department so that they have a clear appreciation of the needs of their customers.

b. Prerequisites. Security requirement: Secret security clearance eligibility.

c. Requirements. Complete the Aviation Supply Officers Course at Naval Supply Corps School, Newport, RI.

d. Duties. For a complete listing of duties and tasks, refer to reference (ag), Aviation Logistics Individual Training Standards.

e. Related Standard Occupational Classification (SOC) Title and Code. Transportation, Storage, and Distribution Managers 11-3071.

f. Related Military Skill. None.

Appendix E. Selected OAR Unmatched Knowledge Requirements

These Knowledge Requirements were identified by the OAR as not taught in Formal Training to 21As.

The researcher felt these training requirements could be taught to both 21A and 21R communities and so, complement the heart of this study; to identify potential areas of overlapping Knowledge, Skills and Abilities needed by 21A and 21R officers.

- AFTO 22, Technical Order Change Recommendations
- Air and Space Expeditionary Forces (AEFs)
- Air Force Occupational Safety and Health (AFOSH) Program
- Design Operational Capability (DOC) Statements
- Due-In From Maintenance (DIFM) Processes
- Flightline Security Requirements
- Force Protection Conditions (FPCONs)
- General Principles of Flightline Safety
- Generation Flow Planning
- Government Purchase Card (GPC) Procedures
- Hazardous Materials (HAZMAT) and Spill Response Procedures
- Leading and Lagging Indicators
- Logistics Compliance Assessment Program (LCAP)
- Logistics Standardization and Evaluation Program (LSEP) Inspections
- Maintenance Supply Processes
- MAJCOM Inspections, other than LSEP or MSEP-Related Inspections
- Mission Capable (MICAP) Management Procedures
- One Time Inspections
- Operation Plans (OPLANs)
- Operational Readiness Inspections (ORIs) or Evaluations (OREs)
- Operational Risk Management (ORM) Procedures
- Operations Security (OPSEC)
- Performance Reports
- Personal Protective Equipment (PPE)
- Self-Inspection Programs (SIPs)
- Special Certification Rosters (SCRs)
- Technical Order (TO) Uses or Applications
- Time-Phased Force Deployment Data (TPFDD)
- Tool Control Processes
- Training Business Area (TBA)
- Unit Compliance Inspections (UCIs)
- Unit Manpower Requirements, such as Unit Personnel Manpower Requirements (UPMRs) or Unit Manning Documents (UMDs)

Appendix F. Interviewee Packet

AFIT STUDY: Key Personnel Interview Questions

- 1) You have a cadet in your office for the Summer “Operations Air Force” program. He really likes what your unit does and is interested in becoming a Logistics/Maintenance Officer. He has some play in his schedule and asks what courses you would recommend he take to finish up his time in college. What do you recommend? Why?
- 2) You are at the Club and a young CGO in your unit tells you she is ready to start a master’s degree program. She doesn’t just want to “check the box” and really wants something that will help her in the 21X world. What type of program would you recommend? Why?
- 3) What types of business skills do 21X officers need to be successful in the USAF? (See page 2 for industry examples; please include AF-specific skills as this list is not all-inclusive) Why?
- 4) What types of logistics knowledge do 21X officers need to be successful in the USAF? (See page 2 for examples; it is not an all-inclusive list) Why?
- 5) What knowledge, skills, and abilities do we lack in the 21X world that we need today? Why?
- 6) What knowledge, skills, and abilities will the 21X community need in the next 5 years that there is not a developed need for today? Why?
- 7) What benefits would today’s Air Force and 21X community enjoy if we had these knowledge, skills, and abilities in questions 5 and 6 in place 5 years ago?

AFIT STUDY: Key Personnel Interview Questions

LOGISTICS KNOWLEDGE

Transport and traffic mgmt
Customer service
Warehousing management
Inventory management
Materials handling
Log-related regulations
Production scheduling
Log info management
Order management
Facilities location
Forecasting
Purchasing
Parts and service support
Personnel movement
Packaging
International logistics
Return goods handling
Salvage and scrap disposal

BUSINESS SKILLS

Transportation and logistics
General business admin
Business ethics
Info systems management
Business strategy
Accounting
Business writing
Financial management
Human resource management
Labor relations
Microecon
Quantitative methods
Procurement
Organizational psych
Production management
Computer science
Statistics
Marketing management
Industrial engineer
Macroecon
Business and government
Business law
Public relations
Business and society
Transport engineer
Industrial sociology
International business
Business history
Economic geography
Insurance and real estate
Speech communications
Regional planning
Foreign languages
Electronic commerce
Supply chain mgmt
Entrepreneurship

*These Lists Derived from Murphy & Poist (1991, 2007)

Appendix G. Focus Group Packet

Mission Set Definitions

Team _____

What does a Deployment Manager do in the USAF?

What does a Distribution Manager do in the USAF?

What does a Supply Chain Manager do in the USAF?

What does a Mission Generation Manager do in the USAF?

What does a Repair Network Integration Manager do in the USAF?

What does a Life Cycle Logistics Manager do in the USAF?

What does a Joint Logistics Manager do in the USAF?

What does a _____ Manager do in the USAF?

KSAs Development Worksheet

Date _____

[illegible][illegible]Team's Unit

--

Team member Name, Rank

Experience

1	A-B-C-D-E-F-G
2	A-B-C-D-E-F-G
3	A-B-C-D-E-F-G
4	A-B-C-D-E-F-G
5	A-B-C-D-E-F-G
6	A-B-C-D-E-F-G
7	A-B-C-D-E-F-G
8	A-B-C-D-E-F-G
9	A-B-C-D-E-F-G
10	A-B-C-D-E-F-G

Industry Knowledge Skills and Abilities

LOGISTICS KNOWLEDGE

Transport and traffic mgmt
Customer service
Warehousing management
Inventory management
Materials handling
Log-related regulations
Production scheduling
Log info management
Order management
Facilities location
Forecasting
Purchasing
Parts and service support
Personnel movement
Packaging
International logistics
Return goods handling
Salvage and scrap disposal

BUSINESS SKILLS

Transportation and logistics
General business admin
Business ethics
Info systems management
Business strategy
Accounting
Business writing
Financial management
Human resource management
Labor relations
Microecon
Quantitative methods
Procurement
Organizational psych
Production management
Computer science
Statistics
Marketing management
Industrial engineer
Macroecon
Business and government
Business law
Public relations
Business and society
Transport engineer
Industrial sociology
International business
Business history
Economic geography
Insurance and real estate
Speech communications
Regional planning
Foreign languages
Electronic commerce
Supply chain mgmt
Entrepreneurship

MANAGEMENT ABILITIES

Personal integrity
Motivate others
Plan
Organize
Self-motivation
Managerial control
Oral communication
Supervise others
Decision making ability
Self-confidence
Delegate
Time mgmt
Negotiate
Adapt to change
Interpersonal relations
Written communication
Persuasion
Systems concept
Listen and empathize
Train/mentor
Enthusiasm
Analytic reasoning
Operational log tasks
Assertiveness
Personal grooming
Personal dress
Statesmanship
Future threats/opts
Quant jock
Outgoing personality
Computer jock
Foreign languages
Recruit/hire
Personal creativity
Manage supplier relations
Manage customer relations

It is our opinion that PME
focuses on these, therefore
our study will not.

*These Lists Derived from Murphy & Poist (1991, 2007)

Appendix H. Parent and Child KSAs according to Blind Review

The below enumerated Parent KSAs were derived by a blind review of four 21X officers from the lettered child KSAs provided by focus group KSA worksheet inputs.

1. Acquisitions
 - a. Acquisition Milestones
 - b. Acquisition Process
 - c. Acquisition/Procurement
 - d. Acquisitions
 - e. DOTMILPDF
 - f. Experience in one or more areas of the life cycle (test, ops, sustainment, acquisition)
 - g. Introduction of a new Item (requirement IA)
 - h. Make ACQ 101 mandatory
 - i. Procurement
2. Adaptability
 - a. Adapt to change
 - b. adapt to change/flexibility
 - c. Adaptability
 - d. Adaptive Planning
 - e. Flexible
3. Aerospace Planning
 - a. AEF Concept
 - b. AEF Next
 - c. AEF Process/program
 - d. Agile Combat Support
 - e. CAF
 - f. CRAF
 - g. Expertise MAF logistics
 - h. MAF deployments (Strat, Tact, Tanker)
4. Air Cargo Procedures
 - a. Air Drop
 - b. Aircraft Loading
 - c. Country Clearance
 - d. Engine Running Offload's Planning
 - e. Load Planning
5. Air Trans
 - a. Air Infrastructure
 - b. Airlift
 - c. Airlift Knowledge

6. Aircraft Generation
 - a. 2408s/2409s
 - b. Aircraft Generation
 - c. Generation Effort (Combat)
 - d. Generation Flow Plan
 - e. Generation Timing
 - f. Phase I
 - g. Phase II
7. Analysis
 - a. Aircraft Availability
 - b. Analysis
 - c. Analysis Tools
 - d. Analytical statistics
 - e. Analyze Fleet
 - f. CANN Rate
 - g. Charts
 - h. Condition Analysis
 - i. Data Analysis
 - j. Data Gathering
 - k. Deviations
 - l. Fix Rates
 - m. Fleet Health
 - n. Fleet Health Indicators
 - o. Fleet Health Management
 - p. Fleet Maintenance Data
 - q. Health of Fleet
 - r. Leading Indicators; break rate, repeat recurs
 - s. Maintenance Analysis
 - t. Maintenance Analysis products; How to utilize for fleet health
 - u. Maintenance Capabilities
 - v. Metrics
 - w. Modeling
 - x. Models
 - y. Operations Research
 - z. Quantifying
 - aa. Quantitative Measurements
 - bb. Quantitative Methods
 - cc. Reliability/maintainability
 - dd. Reports
 - ee. Statistics
 - ff. Throughput Capacity
 - gg. TNMC - MX

8. Asset Management
 - a. Asset Knowledge
 - b. Asset Management
 - c. Asset Visibility
 - d. Bench Stock
 - e. Ensure good visibility of parts
 - f. Fill Rates
 - g. Inventory
 - h. Inventory Management
 - i. Inventory of assets (aircraft, ships, tanks, etc)
 - j. Kit Fill Rate
 - k. Material Management
 - l. mission support kits
 - m. Not abusing supply system
 - n. Parts
 - o. Parts Availability
 - p. Parts Management
 - q. Property Books
 - r. Supply Accounts
 - s. Supply Priorities
 - t. Total Asset Availability
 - u. Warehouse/inventory management
9. Base Support and Expeditionary Site Planning
 - a. Base Support Plan/ESP
 - b. Basing
 - c. bed down planning
 - d. BSP Training
 - e. IGESP
 - f. In-Garrison Expeditionary Site Plan
10. Business Acumen
 - a. Ability to work with people
 - b. analytical reasoning
 - c. business and government
 - d. Business Ethics
 - e. business ethics
 - f. Business Government
 - g. business law
 - h. business mgmt
 - i. business strategy
 - j. Business/management/communications skills
 - k. Critical Thinking
 - l. decision making
 - m. decision making ability
 - n. economics
 - o. form teams
 - p. General Administration

- q. General Business admin
- r. innovation
- s. international business
- t. managerial control
- u. Marketing Management
- v. micro economics
- w. most efficient way to manage
- x. negotiating skills
- y. negotiation
- z. negotiations
- aa. Organization
- bb. organization skills
- cc. Outside the box thinker
- dd. Oversight
- ee. Persuasion
- ff. Plan
- gg. Prioritization
- hh. Problem solving
- ii. Program Management
- jj. Project Management
- kk. Resource Allocation
- ll. Review Business models of successful "profitable" business
- mm. Risk Management
- nn. risk taking
- oo. Situational Awareness
- pp. Strategic Focus
- qq. thinking outside the box
- rr. time management
- ss. time management/delegation
- 11. Cargo Deployment Function
 - a. Cargo Deployment Function Processes
 - b. Personnel Deployment Function/Cargo Deployment Function
- 12. Cargo Movement
 - a. Cargo
 - b. cargo handling procedures
 - c. cargo movement
 - d. commercial cargo processes
 - e. Configuration (ie "Spoke", "Straight Line")
 - f. Familiar with available transport network
 - g. Ground infrastructure
 - h. Ground/Air Transportation
 - i. inbound freight
 - j. land sea
 - k. material handling
 - l. material management
 - m. Materials Handling

- n. Movement
- o. Movement of Hazardous classes
- p. Multi-modal
- q. Multi-modal means
- r. Multimodal Trans
- s. Other Trans Modes
- t. outbound freight
- u. processing cargo
- v. traffic management
- w. Traffic Management Office
- x. Transportation and Traffic Management
- y. Transportation
- z. Transportation & International Logistics
- aa. transportation and logistics
- bb. transportation engineering
- cc. transportation logistics
- dd. Transportation modes--other than air
- ee. Transportation Network (Civilian and Military)
- ff. Transportation Resources
- gg. Understand transportation
- 13. Classes of Supply
 - a. Army supply categories
 - b. Class of Supply
 - c. Classes (I, II, III etc)
 - d. Classes of Supply
 - e. supply classes
- 14. Communication
 - a. be able to explain things across each service (lingo)
 - b. Briefing skills
 - c. bullet writing
 - d. business/mgmt/comm skills
 - e. Communicating with Ops planners/Schedulers
 - f. communication
 - g. communication skills
 - h. Documentation
 - i. EXORDs, etc
 - j. Foreign Language
 - k. interagency communication
 - l. interfacing
 - m. Interpersonal Communication
 - n. interpersonal relations
 - o. interpersonal skills
 - p. Logistics lines of communication
 - q. oral communication
 - r. PowerPoint skills
 - s. Professional Writing

- t. Public Speaking
- u. publish priorities to field
- v. social skills
- w. Speech Communication
- x. Terminology
- y. Written Communication
- 15. Contracting
 - a. Basic contracting
 - b. Contract Logistics Support
 - c. Contract regulations
 - d. Contract Requirements/Limitations
 - e. Contract Timing
 - f. contracting
 - g. contracting knowledge
 - h. contracting skills
 - i. Contracting/Acquisition
 - j. Contracts
 - k. Engineering contracts
 - l. Establish Contracts
 - m. Host Nation Support
 - n. Procurement
 - o. procuring vehicles
 - p. purchasing
- 16. Customer Service
 - a. Customer Service
 - b. Customer Relations
- 17. Deployable Skills
 - a. ADCON/OPCON at deployed Location
 - b. ADVON
 - c. CAF unit Deployment
 - d. Combat Skills appropriate for deployment (such as convoys)
 - e. deployed joint logistics
 - f. jointness
 - g. Understanding Joint Operations
 - h. Warfighting
- 18. Deployment Operations - Site Surveys
 - a. Bare Base Requirements
 - b. BEAR
 - c. Site Planning
 - d. Site Survey
- 19. Disposition
 - a. Backorders
 - b. delinquent document & rejects
 - c. Demil
 - d. disposal
 - e. Disposition

- f. Equipment Retirement
 - g. Obsolescence
 - h. retrograde
 - i. return goods (PQDR)
 - j. return goods handling
 - k. salvage
 - l. salvage disposal
 - m. salvage/scrap mgmt
20. Enterprise Logistics
- a. ability to interact w/outside agencies like DLA/AFPA
 - b. Demand Management
 - c. DLA
 - d. DLA disposition
 - e. DLA distributor orientation
 - f. DLA processes
 - g. DOT
 - h. enterprise view
 - i. GLSC
 - j. GLSC/DLA/Organic Integration
 - k. item manager
 - l. JSTC capabilities
 - m. retail logistics
 - n. Source of Supply/ALC
 - o. Surface Deployment and Distribution Command
 - p. TRANSCOM
 - q. TRANSCOM process
 - r. understanding how other agencies do logistics (like dept of state)
 - s. wholesale logistics
 - t. Wholesale vs Retail
21. Equipment Management
- a. Allocating resources and eqt appropriately
 - b. allowance sources
 - c. Equip Prep
 - d. Equipment
 - e. equipment accountability
 - f. Equipment Availability
 - g. equipment mgmt
 - h. Test equipment
22. Flightline Operations
- a. Aircraft Service
 - b. EOR/pits
 - c. Fleet Service
 - d. Flightline Ops
 - e. flightline procedures
 - f. Launch
 - g. Launch/Recovery

- h. Ops production
- i. Parking planning
- j. Pre/Post Flight
- k. Recovery
- l. Servicing
- m. Thru Flight
- n. Weapons Loading
- 23. Flying Hour Program
 - a. Combat Aircrew Program
 - b. Flying Hour Program
 - c. Flying Schedule Management
 - d. minimizing 2407s, de-conflict with training days, check turn rates
 - e. Operations training requirements
 - f. Ops Requirements
 - g. Ops Scheduling
 - h. Pilot Production Requirements
 - i. Programmed Flying Training
 - j. Ready Aircrew Program
- 24. Forecasting
 - a. demand forecasting
 - b. Forecast
 - c. Forecasting
 - d. Forecasting Availability
- 25. Fuels Management
 - a. Fuels
 - b. fuels knowledge
 - c. POL
 - d. Spill Response (Fuels)
- 26. Funding
 - a. \$ Management
 - b. accounting
 - c. budget
 - d. Budget Codes
 - e. Budget Management
 - f. CAM
 - g. Colors of Money
 - h. Cost Effectiveness
 - i. fight for money
 - j. finance
 - k. Money
 - l. Org funding
 - m. POM
 - n. POM/PEM
 - o. Pots of Money
 - p. POTUS budget
 - q. PPBE

- r. Program Objective Memorandum
- s. programming/POM
- t. Resource Management
- u. TWCF
- v. WCF/APN
- w. WCF/Depot Mx Funding
- 27. Governing Documents
 - a. AF doctrine
 - b. AFI 20-117 (Draft)
 - c. AFI 21-101
 - d. AFI 21-165
 - e. AFI 23-101
 - f. AFI 23-110
 - g. AFI 63-101
 - h. army doctrine
 - i. doctrine
 - j. Defense Travel Regulation
 - k. Joint Federal Travel Regulation
 - l. Joint doctrine
 - m. Log regulations
 - n. log related regs
 - o. log related regs
 - p. log related regs
 - q. log related regs
 - r. log related regulations
 - s. logistics regs
 - t. Maintenance Standardization & Evaluation Program
 - u. National Strategy
 - v. official travel regs
 - w. regulation knowledge
 - x. regulations
 - y. regulations/IDO knowledge
 - z. regulations/IDO knowledge
 - aa. regulations/IDO knowledge
 - bb. ROEs
 - cc. TCTO/TC
 - dd. TCTOs
 - ee. title 10 law
 - ff. TO 00-20-1
 - gg. trans requirements and laws
- 28. Household Goods
 - a. Household Goods
- 29. Industrial Engineering
 - a. facilities
 - b. facilities location
 - c. Facility Management

- d. Hardened Aircraft Shelter Operations
 - e. Industrial Engineering
 - f. industrial plans
 - g. insurance/real estate
 - h. Proper placement of Machines
30. Information Management
- a. AFEMS/SBSS
 - b. Air Force Equipment Mgt System
 - c. Automated Data Systems
 - d. basic deployment sys knowledge
 - e. Classified Management
 - f. Cargo Movement Operations System
 - g. computer jock
 - h. computer science
 - i. computer skills
 - j. D200 computations
 - k. DCAVES
 - l. DCAVES Course
 - m. DEERS/SORTS
 - n. Deployment Systems
 - o. ECSS
 - p. Electronic Commerce
 - q. GATES
 - r. GATES, SMS, CMOS, GTN,
 - s. GDSS
 - t. Global Force Management
 - u. GO81 Knowledge
 - v. IMDS
 - w. integrated deployment sys
 - x. information management
 - y. Information Systems
 - z. information systems mgmt
 - aa. IT
 - bb. IT Systems
 - cc. ITV
 - dd. JDPAC
 - ee. Joint Operations Planning and Execution System
 - ff. Joint Planning System
 - gg. joint systems
 - hh. JOPES (basic knowledge)
 - ii. JOPES, DCAVES, LOGMOD,
 - jj. JOPES/DECAVES
 - kk. Log systems
 - ll. logdet, logfor etc
 - mm. Logistics information mgmt
 - nn. LOGMOD

- oo. LOGMOD Course
- pp. LOGMOD skills
- qq. Mng Multiple Sources Info
- rr. Mx info Systems
- ss. network dynamics
- tt. overall IT skills
- uu. PPT skills
- vv. SBSS
- ww. Supply systems
- xx. Systems (D200)
- yy. systems knowledge
- zz. transportation systems
- aaa.Virtual Fleet
- 31. Installation Deployment Planning
 - a. building DSOEs
 - b. DCC mgmt
 - c. Deployment Planning
 - d. Deployment Process
 - e. IDO Course
 - f. IDO Skills
 - g. In-Processing
 - h. Installation Deployment Plan
 - i. Installation Deployment Planning
 - j. installation functional knowledge
 - k. Mobility Deployment
 - l. Out Processing
 - m. Phase I
 - n. Phase II
 - o. Plan
 - p. planner (CWPC)
 - q. planning
 - r. pre-deployment tasks
 - s. Reconstitution
 - t. redeployment
 - u. Redeployment Processes
 - v. Regeneration
 - w. TDY Planning
- 32. International Logistics
 - a. international affairs
 - b. international customs
 - c. International Logistics
 - d. international regs
 - e. International Transport Requirements
- 33. Leadership
 - a. approachable
 - b. assertiveness

- c. confidence
 - d. decision making
 - e. delegation
 - f. discipline
 - g. easy going
 - h. leadership
 - i. Leadership by example
 - j. Leadership skills
 - k. Leading SNCOs
 - l. mentor
 - m. Motivate Others
 - n. people skills
 - o. personal creativity
 - p. Personal Integrity
 - q. supervise others
 - r. time management/delegation
 - s. train/mentor
 - t. training abilities
- 34. MICAPs
 - a. MICAPS
 - b. MICAP response time
 - 35. Mobility Operations
 - a. DDOCs
 - b. Maritime Prepositioned Force
 - c. theater distribution
 - 36. Munitions Management
 - a. Global Ammunition Control Point
 - b. Munitions
 - c. Munitions Processing
 - 37. Packaging/Crating/Palletizing
 - a. packaging
 - b. Packaging/Crating
 - c. Packaging/DOT
 - 38. Personnel Management
 - a. battle rosters
 - b. Civilian Relations
 - c. Civilian Workforce
 - d. Human Relations Management
 - e. Human Resources
 - f. labor relations
 - g. maintenance, learning from their level
 - h. manning and equipment
 - i. Manpower
 - j. Manpower scheduling
 - k. Personnel Management
 - l. title 10 law

- m. Title 32 limitations
- 39. Personnel Movement
 - a. Passenger Management
 - b. PDF Processes
 - c. PDF/CDF
 - d. Personnel Movement
 - e. Personnel Prep
 - f. personnel processes
 - g. processing passengers
- 40. Plans Management
 - a. All aspects Planning
 - b. CAP-Crisis Action Planning
 - c. COMDES
 - d. contingency planning
 - e. CQCP Course
 - f. CR Class CR-MOC
 - g. crisis management planning
 - h. CWPC (Planning)
 - i. Deliberate Plans
 - j. deliberate/CAP/Planning
 - k. deployment planning
 - l. desperate/crisis action planning
 - m. Employment of Force
 - n. Forecasting (sending best aircraft based on depot/phase/ISO)
 - o. Functional Demands
 - p. future threats/ops
 - q. global/reg planning
 - r. Joint Planning Skills
 - s. Material Requirements Planning
 - t. MEP
 - u. National Strat Plan
 - v. Plan creation
 - w. Plans
 - x. Oplan interpretation
 - y. OPLANS/OPORDS
 - z. plan/organize
 - aa. plan/oversight
 - bb. planning
 - cc. planning 101
 - dd. Plans
 - ee. Regional Planning
 - ff. Requirements vs. Capability
 - gg. sustainment planning
 - hh. trans planning
- 41. Port Management
 - a. Aerial Port

- b. APOC
- c. JTF - PO
- d. MAPOC
- e. Port Management
- f. Port Management (Surface/sea/air)
- g. Port Operations
- 42. Process Improvement
 - a. 6 Sigma
 - b. Acft Downtime Utilization
 - c. afso 21
 - d. constraint Management
 - e. CPI Lean
 - f. deputy processes
 - g. Efficiency from head to tail
 - h. First Article Test RCM for # of items
 - i. lean
 - j. Process (Acq 101, etc)
 - k. Process Improvement
 - l. process mgmt
 - m. Product Improvement
 - n. product quality
 - o. Quality Assurance
 - p. Some Systems Engineering
 - q. streamlining processes
 - r. Theory Of Constraints
- 43. Production Management
 - a. Capability/Capacity
 - b. Manufacturing
 - c. Production
 - d. Production Control
 - e. Production mgmt
 - f. Production Mx
 - g. Resource Management
 - h. Sortie Production
 - i. Workload Allocation
- 44. Readiness
 - a. ART
 - b. ART/SORTS
 - c. Deployment Readiness
 - d. Doc Statement
 - e. DRRs/Sorts/ARTs
 - f. readiness
 - g. readiness reporting like ART/SORTS/DRRS
 - h. SORTs/ARTs/DRRs
 - i. Squadron Readiness/Trng
 - j. Task (Gen) DOC

- k. UDM Course
- 45. Repair Cycle
 - a. Acft parts availability
 - b. assistance requests (107, ETAR, REDI)
 - c. Bad Actor Program
 - d. CIRF
 - e. Component Maintenance
 - f. Component Repair
 - g. Condition Analysis
 - h. depot
 - i. depot level repair
 - j. Depot PDM
 - k. depot processes
 - l. depot repair network
 - m. Depot Support
 - n. DIFM
 - o. DIFM Rate
 - p. Engineering Technical Asst Request
 - q. Experience in one or more areas of the life cycle (test, ops, sustainment, acquisition)
 - r. Intermediate Repair Enhancement Program
 - s. MSG-3 (Maintenance Steering Group-3)
 - t. MXS levels of repair
 - u. Not Repairable This Station
 - v. Off Aircraft Repair
 - w. On Aircraft Mx
 - x. on/off aircraft repair process times
 - y. Parts
 - z. Parts & Service Support
 - aa. Parts delivery
 - bb. Parts Support
 - cc. parts/service
 - dd. parts/servicing
 - ee. PDM Cycle
 - ff. Phase Flow
 - gg. Phase/ISO management
 - hh. Repair capability assessment
 - ii. Repair Chain
 - jj. Repair Cycle
 - kk. Repair Network
 - ll. reparable
 - mm. Requirement
 - nn. Scheduled/Unscheduled Mx
 - oo. sustainability
 - pp. Sustainment
 - qq. sustainment strategy

- rr. Tail Number Bins
- ss. timely delivery to flightline
- 46. Requirements
 - a. Acft Structural Integrity Program
 - b. Commonality
 - c. Interoperability
 - d. Modernization
 - e. Modification
 - f. Reliability Engineering
 - g. Requirement Determination
 - h. Requirements Definition
 - i. Service Life Extension Programs
- 47. Research and Development
 - a. Engineering
 - b. Experience in one or more areas of the life cycle (test, ops, sustainment, acquisition)
 - c. Research and Development
 - d. Testing
- 48. Safety
 - a. AFOSH Standards
 - b. HazMat
 - c. HAZMAT regs
 - d. Industrial Safety
 - e. ORM
 - f. OSHA & AFOSH
 - g. Personnel Protective Equipment
 - h. safety
- 49. Scheduling
 - a. Aircraft Configuration Management
 - b. ATO Development
 - c. Long-range planning
 - d. Maintenance Scheduling
 - e. Production Scheduling
 - f. Scheduling
- 50. Service Culture/Org Capabilities
 - a. Capabilities
 - b. culture
 - c. Executive Agency
 - d. inter-service perspective
 - e. joint service knowledge
 - f. know rank structure and service customs
 - g. knowing the seams
 - h. log mgmt of other services
 - i. Mission Statements
 - j. non-AF logistics functions
 - k. org structure of other services

- l. other service log ops
- m. personnel mgmt of other services
- n. rank and power
- o. ranks
- p. relationship building
- q. service knowledge
- r. Service specific
- s. services capability
- t. sister service knowledge
- u. Sister Service Processes
- v. Sister Service Systems
- w. Standardization
- x. Structure
- y. Uniforms
- z. unit organization terms
- 51. Shelf Life Program
 - a. shelf life
- 52. Sister Service Interoperability
 - a. ALOCs
 - b. create joint efforts
 - c. DDOCs
 - d. Integration
 - e. Integration skills
 - f. interagency ops
 - g. Interoperability (Assets)
 - h. interoperability
 - i. Logistics Operations Centers
- 53. Sourcing
 - a. Diminishing Manufacturing Sources
 - b. manage supplier relations
 - c. Manager/supplier relations
 - d. Order Management
 - e. ordering
 - f. Parts Provisioning
 - g. parts sourcing
 - h. requisitioning
 - i. Tools Sourcing
- 54. Stock Control Processes
 - a. Adjusted stock levels
 - b. inventory balancing
 - c. leveling
 - d. readiness base level
 - e. stock allocation/authorization
 - f. Stock Control
 - g. Stock Levels
 - h. Stock management

- i. Stock positioning
- 55. Supply Chain Management
 - a. Supply Chain Management
- 56. Support Agreements
 - a. Host Nation Support
 - b. support agreement training
- 57. Systems Engineering
 - a. Systems Concept
 - b. Systems Engineering
- 58. TPFDD Management
 - a. Day-to-day tasking mgmt
 - b. TPFDD
 - c. TPFDD knowledge
 - d. TPFDD Mgmt
 - e. TPFDD Planning
 - f. TPFDD, CWPC
 - g. TPFDDL/DSOE flow
- 59. UTC Management
 - a. ULN Requirements
 - b. UMD (Task)
 - c. UTC
 - d. UTC capability
 - e. UTC Mgmt
- 60. Vehicle Management
 - a. Fleet mgmt
 - b. Vehicle Maintenance
 - c. Vehicle mgmt
 - d. vehicle ops and management
 - e. vehicle utilization
- 61. Warehouse Management
 - a. Warehouse
 - b. warehouse management
 - c. warehouse/inventory mgmt
 - d. warehousing
 - e. warehousing inventory
 - f. warehousing procedures
- 62. Weapons System Knowledge
 - a. acft transition courses--need to be online
 - b. aircraft familiarization
 - c. Aircraft Systems
 - d. Airworthiness
 - e. C-17
 - f. C-5
 - g. Ops Reg (-1)
 - h. Safe Operating Envelope
 - i. Tanker

- 63. WRM Management
 - a. Nuclear WRM
 - b. WRM
 - c. WRM program
 - d. WRMO Training

Appendix I. Descriptions of Applicable DoDOCCs

DoD 1312.1-I, March 2001

DEFINITIONS - OFFICER DOD OCCUPATION CODES

(Officer DoD Occupation Codes)

Occupational Area.....2-digit grouping

Occupational Group.....4-digit grouping

With Medical Specialty... 6-digit grouping

The term "officer" includes all military occupations and/or billet designators that require persons who are commissioned or warrant officers, and all civilian occupations that are similar to the military occupations/ billet designators included here.

21. General Officers and Executives, N.E.C. - Includes all officers of General/Flag rank and all commanders, directors, and planners not elsewhere classified.

2101. General and Flag - Includes all occupations where individuals involved are of General or Flag rank.

2102. Executives, N.E.C. - Includes all directors, planners and executives not elsewhere classified, and all Marine Corps full Colonels.

22. Tactical Operations Officers - Includes pilots and crews and operations staff officers.

2201. Fixed-Wing Fighter and Bomber Pilots - Includes pilots of various types of fighter, attack, and bomber aircraft.

2202. Other Fixed-Wing Pilots - Includes non-fighter and bomber fixed-wing pilots such as those engaged in transport, supply and reconnaissance.

2203. Helicopter Pilots - Includes pilots of various types of helicopters.

2204. Aircraft Crews - Includes navigators, bombardiers, radar intercept officers, and other officer aircraft crew personnel.

2205. Ground and Naval Arms - Includes infantry, artillery, armor and close support officers, and Naval ship commanders and other warfare-related officers.

2206. Missiles - Includes guided and ballistic missile systems officers and unit commanders.

2207. Operations Staff - Includes combat, operations, and intelligence staff officers.

2208. Civilian Pilots - Includes all non-military pilots.

23. Intelligence Officers - Includes strategic, general, and communications intelligence officers, and counterintelligence officers.

2301. Intelligence, General - Includes strategic, general and technical intelligence gathering, analysis, interpretation, and summary.

2302. Communications Intelligence - Includes intercept, analysis, translation, cryptology, and related communications intelligence.

2303. Counterintelligence - Includes installation, area, and other internal and counterintelligence.

24. Engineering and Maintenance Officers - Includes design, development, production, and maintenance engineering officers.

2401. Construction and Utilities - Includes civil engineers, architects, and other construction and utilities officers.

2402. Electrical/Electronic - Includes electrical and electronic engineers and equipment maintenance officers not classified under Group 2403.

2403. Communications and Radar - Includes communications engineers and communications and radar design, installation, operation, and maintenance officers.

2404. Aviation Maintenance and Allied - Includes aircraft maintenance officers and aeronautical engineers.

2405. Ordnance - Includes weapons engineering and maintenance officers, excluding missile officers.

2406. Missile Maintenance - Includes guided and ballistic missile design, test, and maintenance officers and missile engineers.

2407. Ship Construction and Maintenance - Includes officers concerned with design, development, construction, production, alteration, maintenance, and repair of ships and their equipment.

2408. Ship Machinery - Includes officers who perform functions similar to those listed in 2407 with respect to ships' main propulsion and auxiliary machinery; also includes officers involved in the operation of such machinery.

2410. Safety - Includes ground, aviation, weapons, and nuclear safety officers.

2411. Chemical - Includes chemical engineers and staff officers.

2412. Automotive and Allied - Includes engineers and maintenance officers whose primary concern is with automotive and related equipment.

2413. Surveying and Mapping - Includes surveying, topographic and geodetic engineers, and cartographic and aerial mapping officers.

2414. Other - Includes engineering and maintenance officers that are not readily classified in one of the previous groups.

25. Scientists and Professionals - Includes physical, biological, and social scientists, and other professionals such as lawyers and chaplains.

2501. Physical Scientists - Includes physicists, chemists, geologists, and other physical scientists except meteorologists.

2502. Meteorologists - Includes meteorologists and weather officers.

2503. Biological Scientists - Includes microbiologists, entomologists, physiologists, and other biological scientists.

2504. Social Scientists - Includes historians, economists, sociologists, and other social scientists except psychologists.

2505. Psychologists - Includes all psychologists and human performance engineers.

2506. Legal - Includes lawyers and legal officers.

2507. Chaplains - Includes ordained and other certified clergymen.

2510. Mathematicians and Statisticians - Includes mathematicians, statisticians, operations research analysts, and other mathematical scientists.

2511. Educators and Instructors - Includes teachers and military college faculty members, excluding training administrators.

2512. Research and Development Coordinators - Includes research and development directors, coordinators, and administrators.

2513. Community Activities Officers - Includes counselors and human relations officers.

2514. Scientists and Professionals, N.E.C. - Includes scientists and professionals that are not readily classifiable in one of the previous groups.

26. Health Care Officers - Includes physicians, dentists, nurses, veterinarians, biomedical sciences and allied health officers, and health services administration officers.

2601. Physicians - Includes all allopathic and osteopathic doctors of medicine arranged by medical specialty.

2603. Dentists - Includes all dental officers, arranged by dental specialty.

2605. Nurses - Includes professional nurses including general duty nurses, nurse specialists and command/staff nurses, arranged by specialty.

2607. Veterinarians - Includes all veterinary officers and warrant officer food inspection technicians.

2608. Biomedical Sciences and Allied Health Officers - Includes therapists, optometrists, pharmacists, podiatrists, biomedical laboratory, environmental health, psycho/social, physiologists, and other allied health and biomedical science officers.

2609I. Health Services Administration Officers - Includes all medical and health care administration, management, logistics facilities, personnel, fiscal, and plans officers specifically related to health services administration and management.

27. Administrators - Includes general and specialized administration and management officers.

2701. Administrators, General - Includes adjutants, aides, general administrative officers, and others not classifiable in one of the following groups.

2702. Training Administrators - Includes officers engaged in the planning, management, and operation of training programs.

2703. Manpower and Personnel - Includes manpower and personnel managers, administrators, and analysts, and related officers.

2704. Comptrollers and Fiscal - Includes budget, finance, and accounting officers.

2705. Data Processing - Includes computer systems officers.

2706. Pictorial - Includes photographic, motion picture, and television officers.

2707. Information - Includes public and internal information officers.

2708. Police - Includes enforcement, investigations, corrections, and security officers.

2712. Inspection - Includes Inspector General and technical inspection positions.

2714. Morale and Welfare - Includes band, recreation, and special services officers.

28. Supply, Procurement and Allied Officers - Includes officers in supply, procurement and production, transportation, food service, and related logistics activities not elsewhere classified.

2801. Logistics, General - Includes officers in broad, multifunction logistics activities not specific to a single class of supply or a single supply operation.

2802. Supply - Includes general, technical, and unit supply officers.

2803. Transportation - Includes land, sea, and air transportation operations officers, and traffic and travel control officers.

2804. Procurement and Production - Includes contracting, property and other procurement and production officers.

2805. Food Service - Includes club and mess managers and other food service officers.

2806. Exchange and Commissary - Includes all officers involved in the operation and management of military exchanges and commissaries.

2807. Other - Includes printing and publications, housing and other supply service officers not classifiable in one of the previous groups.

29. Non-Occupational - Includes patients, students, trainees, and other officers who for various reasons are not occupationally qualified.

2901. Patients - Includes officers holding patient designations.

2902. Students - Includes law students, medical students, flight students, and other trainees.

2905. Other - Includes billet designators, officers new to their occupational field, and other non-occupational officers and designations not included in the previous groups.

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Vita

Captain David M. Thompson graduated from Oakville Senior High School in Saint Louis, Missouri. He entered undergraduate studies at the United States Air Force Academy in Colorado Springs, Colorado where he graduated with a Bachelor of Science degree in Chemistry in May 2003. He was commissioned through the United States Air Force Academy where he was recognized as a Distinguished Graduate.

His first assignment was to Aviano AB, Italy as an Aircraft Maintenance Officer in July 2003. While there, he served as Avionics Flight Commander in the 31st Maintenance Squadron, Assistant Officer In Charge of the 555th Aircraft Maintenance Unit, 31st Aircraft Maintenance Squadron and deployed to Balad AB, Iraq in the same role.

He was assigned to Whiteman AFB, Missouri in July 2006, where he initially served as Aircraft Section Officer in Charge, 509th Aircraft Maintenance Squadron. Later, he served as the Fabrication Flight Commander, then Operations Officer of the 509th Maintenance Squadron. In addition, he was deployed to Southwest Asia to serve as the 380th Expeditionary Maintenance Group Executive Officer.

In July 2009, Captain Thompson was assigned as initial cadre of the Directorate of Plans, Programs and Requirements, Air Force Global Strike Command, Barksdale AFB, Louisiana. Here, he served as the B-2 Weapons System Team's Chief of Sustainment, then Special Programs Division Chief of Logistics, and finally as the Director's Executive Officer.

In August 2011, he entered the Graduate School of Engineering and Management, Air Force Institute of Technology. Upon graduation, Captain Thompson will be assigned to the 546th Propulsion Maintenance Squadron, Tinker AFB, Oklahoma.

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14. ABSTRACT This study investigated options to improve 21A training and education by first validating the Air Force's logistics mission sets as Deployment, Distribution, Supply Management, Repair Network Integration, Mission Generation, Lifecycle Logistics and Joint Logistics. Then, the Knowledge, Skills, and Abilities (KSAs) considered important to execute each mission set were gathered from a representative sample of Air Force Logistics Officers via field interviews and focus groups. An analysis of results categorizes probable needs (high, medium, low) of KSAs for each mission set and assesses how well they are currently taught, if at all. Additionally, lists of KSAs that overlap multiple mission sets were created along with process options for integrating them into training and education. Based on a discussion of the synergistic effects on acquiring these KSAs, it is also recommended that the Logistics Readiness Squadron be realigned under a common group at the operational wing with the rest of the Logistics Units (presently the Maintenance Group). Finally, a career tracking model is proposed to deliberately build experts in strategic 21A career paths, which this study identifies as Career Maintenance Officers, Air Force Materiel Managers and Joint Logistics Officers.				
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