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MASTER OF MILITARY STUDIES

LOG Jam: Enhancing the Capabilities of the 0402 Logistics Officer

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Executive Summary

Title: LOG Jam: Enhancing the Capabilities of the Marine 0402 Logistics Officer

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Thesis: The logistical acumen of the Marine logistics officer can immediately be enhanced by addressing four key areas: Joint Logistics, Logistics Support of Special Operations Forces (SOF), Interface with Civilian Logistics (CIV LOG), and Fiscal Management.

Discussion: The Marine Corps 0402 logistics officer faces a diverse and complex operating environment. The ever-changing nature of conflict demands logistics modernization and the resulting adaptation of processes and procedures either enables or inhibits mission success. Joint operations, including Humanitarian Assistance Disaster Relief (HADR) missions, are commonplace and, by their composition, present complex logistical problems. Logistical support to Special Operations Forces (SOF LOG) requires an ability to solve problems by non-traditional means and, often, through interface with joint, coalition, and civilian agencies. The ability to rapidly adapt to a changing environment is critical to the success of civilian logistics and the lessons learned provide an opportunity for the adaptation of current USMC logistics business practices. Smart and efficient fiscal management forms the foundation of logistical therefore the Marine logistics officer must be fiscally competent.

Conclusion: The tempo of logistics modernization demands a multi-functional logistics officer who can address support within the full range of military operations (ROMO). Through continuous evaluation and modification of training methodology, the Marine Corps can groom logistics officers capable of facing the challenges of future operations.

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Table of Contents

Executive Summary	ii
Disclaimer	iii
Table of Contents	iv
Preface	v
Introduction	1
The 0402 Logistics Officer	3
Current Operational Environment	4
Joint Logistics	5
<i>Figure 1: Humanitarian Cluster System</i>	8
<i>Figure 2: Joint Logistics Enterprise (JLEnt) Model</i>	10
Logistics Special Operations Forces Logistics (SOF LOG)	11
Civilian Logistics (CIV LOG) Interface	14
<i>Figure 3: Lean Six Sigma DMAIC Model</i>	17
<i>Figure 4: Lean Six Sigma 8 Wastes</i>	18
<i>Logistics Gateway Concept</i>	20
Fiscal Management: Money as a Weapons System Concept	22
<i>The Professional Logistician</i>	23
Conclusion	25
Appendix A: Subjects covered in the current Logistics Officer Course (LOC)	32
Appendix B: Penn State University Smeal College of Business, Supply Chain and Information Systems (SC&IS) Base Curriculum	33-37
Bibliography	38-39
Glossary	40-42

Preface

This paper offers suggestions that include changing how the logistics community addresses the professional development of the individual entry-level Marine logistics officer in an effort to enhance the collective logistical proficiency of the organization to meet the demands of the future operating environment. As a logistics officer, I feel obligated to impact my community by continuing to be an advocate for change. I'd like to thank the numerous mentors who have aided me in the development of specific topics included within this paper and who continue to help shape me as a professional logistician. Specifically, I'd like to thank LtCol Keith Warren, Col Sean Killen, Col Charles Dunne, Col Kirk Spangenberg, and Col Matt Cook for their direct input regarding all facets of logistics. I'd like to thank Col Neil Schuehle, USMC (ret) for his valuable input regarding SOF LOG and for his continued mentorship. I'd also like to recognize the steadfast efforts of my MILFAC, LtCol Erin McHale, and my academic mentor/CIVFAC, Dr. Nate Packard, Ph.D. for continued support throughout this process.

The leaders I have encountered during my time as a Marine have helped shape the way I view leadership and molded my concept of logistics. Through this paper, I hope to shed light on potential ways the Marine Corps can improve entry-level logistics officer training. I also aspire to make a positive impact on the way logistics officers approach their roles and responsibilities as they face future complex challenges. As professionals, Marine Corps logistics officers have the ability to foster innovation by becoming individual and collective advocates for change within our field.

Introduction

Sun Tzu said, “The line between disorder and order lies in logistics.”¹ Creating order from chaos and providing the sustainment required for mission accomplishment is inherently complex and Marine Corps logistics officers are tasked with facing challenges in every clime and place. The training and education of Marine Corps logistics officers must be symbiotic. Deliberate development of the multifunctional 0402 must strive to groom a logistics officer capable of managing dynamic global logistics that provides efficient, effective support to a wide spectrum of mission sets. Short-term decisions regarding USMC logistical structure and readiness are not always linked to long-term objectives. As a result of the tempo and requirements associated with Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) the focus on the education of logistics officers has remained stagnant. Holding fast to legacy subject matter and archaic methods of teaching are no longer acceptable if the Corps hopes to refine its collective logistical capability. Entry-level Marine officers are more intelligent than they have ever been, yet those with a background in logistics or supply chain management do not have an opportunity to serve in that capacity under the current construct of officer military occupational specialty (MOS) selection. Through close and constant evaluation of training methods and subject matter associated with modern logistics, the Marine Corps has an opportunity to develop an organic capability that meets the demands of future operations.

Suggestions for transforming the face of Marine logistics have been made previously. On 12 March 2009, Major Kirk Spangenberg, a student at Command and Staff College, submitted his Master of Military Studies (MMS) thesis entitled, “Putting the ‘L’ in MAGTF.” The paper would go on to be published in the Marine Corps Gazette in August 2009 and many of Maj Spangenberg’s points mirror the topics within this paper. He addresses joint, coalition, and interagency logistical integration.² Maj Spangenberg recommends a shift in methodology

that uses a holistic approach to logistical training and education.³ He also asks for a deliberate examination and evaluation of the logistical training continuum and the Marine Corps officer assignment policy.⁴ Just as this paper will highlight, Maj Spangenberg specifically reinforced the importance of entry-level training and education for logistics officers.⁵ During a personal interview with LtCol Spangenberg, the topic of change and transformation arose. His enthusiasm for my efforts were overshadowed by the realization that the change he envisioned was hindered by a bureaucratic process that still exists today.

As the dispersion of US forces across the globe continues, the demand for multifunctional logistics officers grows. The Marine Operating Concept (MOC), dated September 2016, outlines a future operational environment that poses specific challenges to Marine logistics officers. The subject of future operations demands attention and, as a result, 158 implied tasks for logistics have been identified within the MOC. Logistics Modernization (LOG MOD) and the inherent adaptation of logistical practices, processes, and procedures demands a logistics officer capable of managing an increasingly complex problem set. Multifunctional logistics officers must have a foundation of knowledge that arms them with the skills to provide seamless support throughout all levels of conflict and in every operational environment. By training and developing world-class logistics officers, the Marine Corps secures the ability to sustain the force throughout the ROMO and meet the challenges of the future. However, the breadth of topics associated with multifunctional logistics requires constant evaluation and prioritization. The logistical acumen of the Marine Corps logistics officer can immediately be enhanced by addressing four key areas: Joint Logistics, Logistics Support of Special Operations Forces (SOF LOG), Interface with Civilian Logistics (CIV LOG), and Fiscal Management.

The 0402 Logistics Officer

The current curriculum for the 0402 is executed by Logistics Operations Schools (LOS), Camp Johnson, NC. The Commanding Officer of LOS, manages 16 various programs of instruction including the military occupational specialty (MOS) 0402 Logistics Officer Course (LOC). The current model for training and development of the logistics officer includes more than 60 specific areas of logistics (see Appendix A). Due to the diversity of logistical billets and responsibilities associated with individual 0402 career paths, not all logistics officers get exposed to the same problem sets within the Marine Air Ground Task Force (MAGTF).

In order to truly be considered multifunctional logistics officers, the 0402 community must have a broad curriculum that encompasses key areas of interest and maintains pace with the private sector. The ability to review and adjust the curriculum and training methodology of the logistics officer is critical to the continued advancement of Marine Corps logistics and will directly impact mission success for future operations. The current model for training logistics officers is antiquated and the reliance on Microsoft Power Point presentations of irrelevant topics must give way to a tailored curriculum that optimizes the capacity to retain knowledge through adult learning theory. Andragogy, a theory introduced in the 1970s by Malcolm Knowles, highlights the fact that adults bring diverse life experiences into the learning environment and these experiences can help foster a solid base for continued learning.⁶ Strategies for andragogy include problem solving activities, realistic simulations, and detailed case studies. Key aspect of adult learning includes the recognition of life-long education and a deliberate focus on self-directed learning. In the most effective academic environments, adults are active participants in the learning process.

Entry-level training sets the foundation for intermediate and advanced training for logistics officers. The Marine Corps struggles to produce operational and strategic level logistics

officers. Rather, the Corps utilizes a model of development that is grounded in “on the job” (OJT) training which produces tactical logistics officers that have particular skills but lack the intricate knowledge to understand full spectrum logistical support throughout all functional areas. By implementing adult learning methodology early, Marine Corps logistics officers can recognize the importance of professional education and be better prepared for advanced training and assignment as future operational and strategic logistics officers.

Current Operational Environment

LOG MOD remains a key focus of the office of the Deputy Commandant for Installations & Logistics (DCI&L) in an effort to ensure the most effective and efficient practices are being used and the technological advancements that enhance logistical capability are requisitioned. Currently, Marine Corps logistics is optimized for large campaigns. As indicated in the MOC, the battlefield of the future may call for a smaller force that demands flexible, adaptable, and responsive logistical support. Overcoming stagnant legacy policies, processes, and procedures enables logistics modernization. Civilian logistics and global supply chain management have recently advanced to the point where major programs of study, undergraduate and graduate level, include specific curriculums that focus on developing high caliber logisticians. Keeping pace with civilian logistics proves difficult for the Marine Corps. The inability to make rapid changes to policy stems from the bureaucratic quagmire of the requisition process and inefficient program management. Limited programs exist that give Marine logistics officers the ability to interface with civilian counterparts. The available programs have a rank association that prevent young enthusiastic officers from having the opportunity to experience the nuisances of civilian logistics and then applying what they learned within the Marine Corps. As the world of global logistics continues to evolve, cross-training logisticians stands as a critical component of modernization. The future logistical success of the Corps depends on our ability to embrace innovative ideas and keep pace with

technological advancements that impact global logistics. Applications of artificial intelligence, autonomous platforms, additive manufacturing, smart LOG transport systems, hybrid logistics, and cutting-edge energy solutions directly impact USMC logistical capability. However, innovation begins with people. As the Commandant of the Marine Corps stated in the MOC, “We cannot meet the demands of an agile, 21st century MAGTF with a 20th century approach to logistics.”⁷

Cutting-edge technology and innovative processes will not impact overarching capability without the highly trained individuals capable of implementing them. A variety of complex problems face Marine logistics officers and they must become the quintessential “Jack of all trades” in order to be prepared to assume a myriad of billets throughout their career. Entry-level training sets the foundation for future development of dynamic leaders in logistics. While every subject cannot be presented at entry-level training, a periodic evaluation of current affairs and prioritization of marquee topics will impact the Corps’ ability to maintain currency in the field and the end state will be a logistics officer who can provide seamless support to the warfighter. Joint Logistics, Logistics Support of SOF, Interface with CIV LOG, and Fiscal Management are relevant to current and future operations and exposure to these topics during entry-level training will make an immediate impact on the logistical capability of the individual 0402 and the Corps.

Joint Logistics

Based on current operations, and in keeping with the focus on future operations as indicated in the MOC, it is professionally irresponsible to ignore joint, combined, and coalition logistics. Joint Publication 1 (JP-1), Joint Operations serves as a doctrinal guideline for joint operations and JP-4, Joint Logistics parallels the Department of Defense (DoD) Concept for Logistics in an effort to provide doctrinal guidance regarding logistical

support of joint operations. The texts of JP-1 and JP-4 reiterate the importance of logistics and the requirement for close coordination of logistical functions in a joint environment. JP-1 states, "Logistics sets the campaign's operational limits. The lead time needed to arrange logistics support and resolve logistics concerns requires continuous integration of logistic considerations into the operational planning process. This is especially critical when available planning time is short. Constant coordination and cooperation between the combatant command and component staffs--and with other combatant commands--is a prerequisite for ensuring timely command awareness and oversight of deployment, readiness, and sustainment issues in the theater of war."⁸

The global operational environment is not Marine Corps specific, it is clearly a joint, combined, and coalition environment. As such, joint logistics is a critical skill set. Maintaining logistical interoperability with the Army, Navy, Air Force, and Coast Guard is, and will continue to be, a priority. Estimates of sustainability are directly impacted by a detailed understanding of logistics within the Joint Operational Planning Process (JOPP) and understanding Title 10, Title 14, and Title 32 responsibilities and identifying the unique capabilities and limitations of adjacent services will help the commander make well informed decisions.

Joint Publication 1-02 defines the term joint as "Connotes activities, operations, organizations, etc., in which elements of two or more Military Departments participate."⁹ The current operational environment includes close interaction with joint, combined, and coalition partners. As experienced in Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), the operating environments of the future, as indicated in the MOC, will continue to include close collaboration with various joint, combined, and coalition partners. Providing joint training to entry-level logistics officers builds on the foundation of understanding that

facilitates navigation of the obstacles associated with joint sustainability. The increase of global response to crisis in recent years energizes joint operations. Unique capabilities resident in each of the services are synchronized and scaled to respond as part of the Joint-Interagency Task Force (JIATF) and, as a result, the training and education of joint operations increase.

Historically, the Marine Corps participates in Humanitarian Assistance Disaster Relief (HADR) missions because, in part, the expeditionary nature of the MAGTF is well suited for rapid global response. Inherently complex, HADR missions involve liaison with joint partners, host nations, coalition forces, humanitarian agencies, and non-state actors. Understanding the mission, capabilities, and limitations of the MAGTF within the HADR mission is absolutely critical to assisting collaborative efforts. Understanding the United States Agency for International Development (USAID), Office of Foreign Disaster Assistance (OFDA) humanitarian cluster system (see Figure 1) is imperative and provides a baseline for the complex coordination associated with HADR.

In keeping with joint operations, and in an effort to harmonize the military capabilities with external humanitarian agencies, USAID OFDA conducts a 2-day Joint Humanitarian Operations Course (JHOC) that highlights international disaster response best practices and the U.S. military's role when supporting foreign HADR operations as provided under DOD Directive 5100.46, Foreign Disaster Relief.¹⁰ Key target participants include U.S. military junior officers in S/J-3 operations and S/J-4 logistics billets. An advanced course for more seasoned officers is the United Nations, Office for Coordination of Humanitarian Affairs (UN-OCHA) Humanitarian Civil-Military Coordination Course (UN-CMCoord). Military support to disaster-affected states coupled with local and international humanitarian organization support requires substantial coordination. All agencies involved operate independent initiatives in the same operational space without becoming a detriment to the humanitarian

assistance efforts of one another. Figure 1 outlines the key responsibilities and supporting agencies within the UN-OCHA humanitarian cluster system. Logistics officers may be tasked to coordinate support functions within this cluster system as part of the U.S. humanitarian assistance disaster relief force.

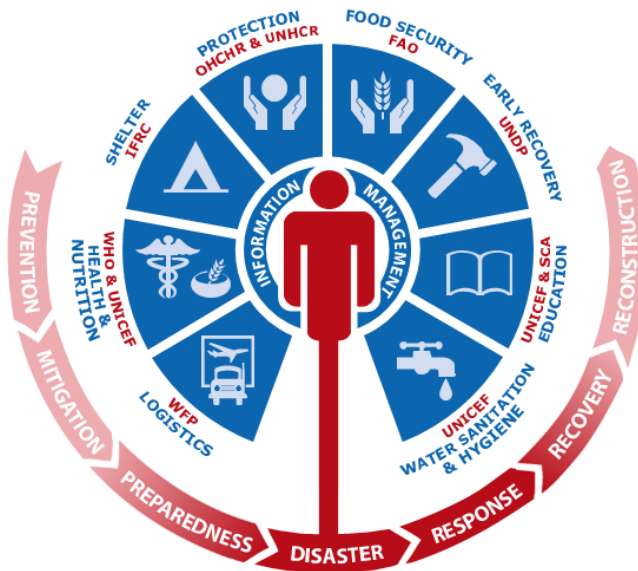


Figure 1: Humanitarian Cluster System

Source: <https://www.unocha.org/legacy/what-we-do/coordination-tools/cluster-coordination>

Joint logistics must become a priority and entry-level Marine logistics officers should attend the USAID/OFDA Joint Humanitarian Operations Course (JHOC), a two-day course which is fully funded and can be taught virtually anywhere. The JHOC course provides context to HADR mission sets, serves as a platform for external coordination, and outlines the practices and procedures of Other Governmental Agencies (OGA). Given the increase in HADR mission sets and the specific relation to logistical capabilities of the MAGTF, the JHOC should be considered as entry-level training and given to every student attending LOC. Follow on training for 0402 O-3/Captains who serve as part of a MAGTF could include the United Nations Civil-Military Coordination course (UN-CMCoord).

The Army Logistics University, Ft. Lee, VA is home to the Joint Logistics Course (JLC), a two-week course sanctioned by the Joint Chiefs of Staff J-4. The JLC mission statement reads, “To educate intermediate-level logisticians in planning, executing, and controlling joint logistics for service in a joint, Joint Task Force, Combatant Command or service component staff in a joint, interagency, and/or multinational environment.”¹¹ The fact remains that intermediate logistics officers, primarily O-4 to O-6, are not the only officers with responsibility in a joint operational environment. Company-grade logistics officers may be tasked with billets that demand an understanding of joint operations and should be considered for this training. The course provides a baseline for understanding joint logistics but doesn’t force joint planning, a critical component of success. Forced synchronization leads to interoperability and must be an objective of joint, combined, and coalition training. A capstone event that includes the joint planning process, associated LOG staff estimates, and fosters coordination across the spectrum of joint, combined, and coalition forces can better achieve the desired end state. By allowing young company grade officers to attend, and through close evaluation of current joint logistical requirements, this course can better prepare the Department of Defense logistics officers to face the unique challenges of future joint, combined, and coalition operations.

Marine Corps Logistics Operations Group (MCLOG) provides MAGTF logistical training but, despite the current operational environment, doesn’t dive into joint logistics. Understanding Title 10, Title 14, and Title 32 responsibilities is the first step in understanding joint operations. A Marine logistics officer’s early understanding of joint logistics doctrine (JP 4-0), JOPP, the Distribution Process Owner (DPO), the Directive Authority For Logistics (DAFL) in a joint environment, and familiarization with the organizations, processes, and authorities that comprise the Joint Logistics Enterprise (JLEnt) promotes the overall success of the MAGTF (see Figure 2). The JLEnt represents the complexity of cross-coordination

that takes place during joint operations. The Non-Governmental Agencies (NGO), multinational coalition partners, interagency partners, partners in industry, and military services with associated defense agencies all have unique requirements and all utilize different logistical support structure to provide sustainment. An early understanding of the inherent responsibilities of logistics officer in a joint operational environment and an appreciation for the capabilities and limitations of all enhances general logistical competency and grooms the 0402 for demanding assignments that rely on global integration.

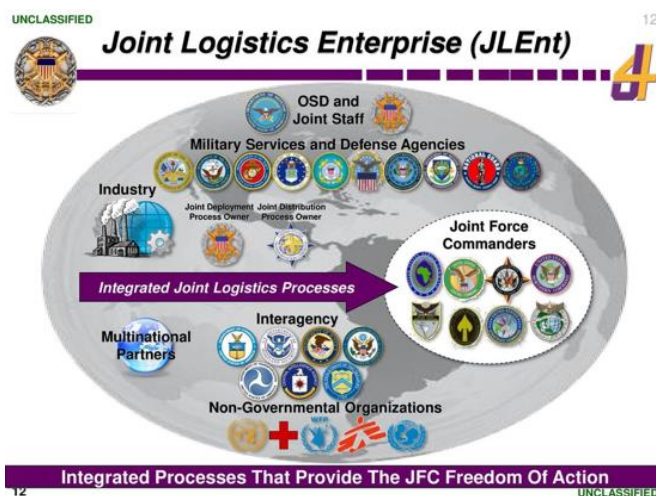


Figure 2: Joint Logistics Enterprise (JLEnt) Model.

Source: DOD Joint Concept for Logistics

JLC should be afforded to 0402 First Lieutenants and Captains. The Marine Corps should fight for additional slots for this course, ensure the Corps maintains adequate LOG faculty representation there, and support a dynamic capstone exercise that forces synchronization and cross-talk between all services and agencies.

MCLOG, the Marine Corps center for logistical training, could also implement specific courses of instruction that focus not just on Naval Logistics Integration (NLI), but Army, Air Force, and Coast Guard logistics. A possible habitual exchange with the JLC and internship

exchange of subject matter experts with the other services may prove valuable. Regardless, an opportunity exists for MCLOG to spearhead a definitive change in the competency of Marine logistics officers operating in the joint environment.

Special Operations Forces Logistics (SOF LOG)

A steady increase in the structure and utilization of Special Operations Forces (SOF) worldwide also presents unique logistical challenges. While individual career paths vary, the logistics officer may encounter SOF in any operational environment. Understanding SOF logistical support requirements can foster communication and coordination which mutually benefits the force. Additionally, the MOC outlines distributed operations with smaller units that operate further from organic support than traditional self-sustaining unit.¹² Subsequently, SOF traditionally operates in smaller units and relies on distributed operational support. Continuous rapid deployment tempo of scaled forces, specific and diverse equipment sets that constantly change, independent lines of funding, and the tyranny of distance associated with distributed operations make SOF logistics a true challenge. Familiarization with SOF LOG helps shape the multifunctional logistics officer who can meet the demands of an operational environment as depicted in the MOC.

SOF traditionally operate in a joint environment at the tactical, operational, and strategic level. Marine Corps Forces Special Operations Command (MARSOC), the United States Marine Corps SOF, works closely with joint partners. Logistical support to SOF units is inherently difficult due to unique equipment sets, specific funds and authorities, high operational tempo, small team rapid deployments to austere environments, and the kinetic nature of operations. These factors make for a challenging support and sustainment agenda. The time, space, and distance problems that accompany the distribution of SOF require an ability to conduct anticipatory logistics, based off SOF Logistical Statistics (LOGSTAT), and

utilize non-traditional sourcing of materials and services. SOF also utilizes unique funding lines like the Major Force Program-11 (MFP-11) for special operations specific equipment. Furthermore, the requirement to provide logistical support to SOF and the directives to do so make it important for traditional forces within that Area Of Responsibility (AOR) to address SOF LOG. Familiarization with SOF LOG is mutually beneficial to the individual logistics officer, to the owning unit of that logistics officer, and to the SOF unit in that perspective AOR.

U.S. Special Operations Command (USSOCOM) Joint Special Operations University (JSOU), Non-Standard Logistics Course assists in the development of key capabilities that enable a SOF logistics officer. The 5-day course introduces best practices in critical and strategic thinking, innovation, problem solving, risk management, negotiations, influence leadership, persuasive communication, and trust in support of conducting global logistics service and support. The course provides graduates with advanced skills, knowledge, and abilities that stimulate innovative thinking to aggressively serve the complex special operations forces (SOF) full spectrum of logistics.¹³ Unfortunately, a prerequisite, 5 years of operational experience, eliminates young SOF LOG officers from experiencing this valuable training.

SOF Truth #5 states “Most Special operations require non-SOF assistance.”¹⁴ If the SOF community understands the importance of non-SOF assistance, the logistics community should take note. MARSOC recently developed SOF support clinics but, despite the growing need, a formal SOF LOG program remains obsolete. MARSOC headquarters resides at Camp LeJeune, NC and just a few miles away sits Camp Johnson, home to Logistic Operations Schools. The geographical proximity of MARSOC and LOC allows for easy coordination which opens the door of opportunity for MARSOC to provide current relevant information to the next generation of logistics officers and plant the seed for SOF LOG support.

The growth of SOF to counter the global threat environment resulted in rapid adjustment by supporting agencies. Logistics officers must understand SOF LOG in order to sustain and support the SOF initiatives worldwide. The addition of a SOF LOG block of instruction, taught by guest MARSOC logisticians, would allow LOC students to be exposed to the unique capabilities and challenges associated with SOF LOG. Furthermore, by owning a SOF LOG block of instruction, MARSOC can provide direct training that will enhance the overall understanding and ability of the USMC 0402 community to provide future support. Discussions with Colonel Neil Schuehle, a previous Commanding Officer of Marine Special Operations School (MSOS), indicate that this may be a mutually beneficial scenario. Col Schuehle also liked the idea of implementing a MARSOC SOF LOG course where select combat service support personnel could provide actual support to the Individual Training Course (ITC) while learning SOF LOG in preparation for assignment elsewhere within MARSOC. Those individuals not assigned to permanent MARSOC billets will still return to their units more knowledgeable and better prepared to interface with SOF in a training and operational environment.

Exposure to the dynamic tempo of SOF LOG helps shape a logistics officer capable of rapidly assessing a problem and then developing unique approaches to solve that problem. The joint focus of the SOF community also bolsters the importance of liaison officers (LNO) to ensure fusion amongst services. SOF assigns the very brightest to serve in Liaison Officer (LNO) billets and providing SOF LOG LNOs would afford selected 0402s the opportunity to serve as the sole Marine logistics representative and, in doing so, learn about SOF LOG through practical application. The completion of the JSOU Non-Standard Logistics Course could serve as a prerequisite for assignment as a SOF LOG LNO in support of Army, Navy, and Air Force SOF.

Civilian Logistics (CIV LOG) Interface

CIV LOG continues to grow and adapt in order to meet the challenges of an ever-changing global market. Marquee universities now provide formal instruction at every level to produce logistics officers capable of facing the challenges of tomorrow. Marine logistic officers will interface with civilian agencies on several fronts to including, but not limited to: embarkation, customs, air/ground/sea lift, ordnance, facilities, maintenance, and contracting. While a few programs that offer CIV LOG interface through fellowship exist, none of them tailor to the junior logistics officers. Interacting with a civilian logistics agency early could set the foundation for logistics officers and future LOG commanders that holds a better understanding of their billet responsibilities. Civilian logistics interface provides invaluable experience that benefits the individual and, ultimately, the entire organization.

The global market demands civilian logisticians of the highest caliber. Major colleges and universities have responded in turn by developing programs of study that specifically address logistics. The collegiate model for the development of a logistician needs to be compared to the current developmental programs for the Marine logistics officer in order to identify gaps and highlight influential training methodology. Widely considered to be one of the top programs for supply chain management in the nation, The Penn State Smeal College of Business attracts top logisticians from around the globe. The Supply Chain and Information Systems (SC&IS) undergraduate major focuses on three critically important areas:

- Core flow functions, which include buy, make, deliver, and return.
- The role of information systems as the critical enabler for integrating supply chains.
- The cross-functional planning perspectives that span core functions, customer relationships, post-sales support, and new product design and launches.¹⁵

Evaluation of the current SC&IS curriculum (Appendix B) shows a high degree of focus on international studies, analytics, management, research, and internships. Through detailed analysis of world-class programs like these, the Marine Corps can better adapt to a changing global market where logistical savvy defines success.

Unlike the private sector, the Marine Corps does not currently recruit, select, or deliberately place logisticians where talent can best be utilized. As an example, a top-tier graduate of the Penn State Smeal College of Business with a degree in SC&IS who desires to become a Marine logistics or supply officer does not currently have the opportunity to do so. They fall victim to the outdated MOS selection process. However, if an individual applicant desires to be an aviator and meets the criteria, they immediately contract to do so. As a result, high level logistical talent seeks experience and employment elsewhere. Additionally, incentives for young logistics officers to continue to study their trade outside of formal military instruction do not exist. Private sector often incentivizes follow-on training for logistical professionals while the Marine Corps pays little attention to logistical or supply chain management instruction outside of the military application.

Private sector interface is an important part of military logistical awareness. By evaluating how the private sector addresses logistical problem sets, we can better understand how to adjust to meet the needs of the warfighter. FedEx supports a long-standing relationship with the Marine Corps and annual Commandant of the Marine Corps (CMC) fellowships allow Marine officers to learn the intricate details of a complex business and then apply lessons learned. The CEO of FedEx, Fred Smith, was a Marine officer who served in combat during the Vietnam War.¹⁶ Fred Smith championed the fellowship between FedEx and the Marine Corps. Though this type of exchange program, no doubt, benefits the individual and the Corps, the return on investment remains limited due to the rank assigned.

A Lieutenant Colonel may learn a great deal through a fellowship with FedEx but the rank and follow-on billets associated with that rank limit the implementation of the lessons learned while assigned to this fellowship. Young intelligent logistics officers are not afforded the opportunity to be screened, selected, or assigned to fellowships or internships and the Marine Corps is missing out on a remarkable chance to develop world-class logistical professionals who can provide valuable return on investment. Global companies are beginning to place heavy emphasis on logistics and the lessons that can be learned through professional fellowships are limitless. By recognizing best practices of successful logistics companies that operate in the global market, the Marine Corps can adapt to keep pace with the private sector.

A company founded on solid logistics is Toyota. The development of Toyota's Lean Six Sigma program changed the face of global logistics and supply chain management and continues to be a staple of international individual and collective logistics training. These are actually two separate programs- Lean and Six Sigma. Lean is the brain trust of Henry Ford and Taiichi Ohno, who implemented the practice into Toyota's manufacturing system. Lean focuses on streamlining through constant process improvement (CPI) and the removal of waste. Six Sigma is a method of efficient problem solving. The 14 Leadership Traits are taught to every recruit that enlists in the Marine Corps and this topic continues with reinforcement during non-commissioned officer (NCO) and staff non-commissioned officer (SNCO) training. This basic model helps develop well-rounded leaders of Marines. Similarly, Toyota utilizes the 14 Toyota Way Principles to develop every manager and logistician. "The Toyota Way" provides a foundation for logistical success and the lessons therein benefit those who implement the practices.¹⁷ The Six Sigma DMAIC model (see Figure 3) is widely used and the application can easily be implemented into any logistical system. Toyota understands that people, not policy or process, drive continuous

improvement.¹⁸ The Lean Six Sigma certification courses progress through six levels of proficiency: white belt, yellow belt, green belt, black belt, master black belt, and champion. Common landmarks in the development of civilian logisticians, the Lean Six Sigma certifications assist in the transformation of logistical practices for the companies that implement the model. Nevertheless, a Marine logistics officer who wishes to certify with Lean Six Sigma does not have an incentive to do so within the current construct.



Figure 3: Lean Six Sigma DMAIC Model

Source: <https://goleansixsigma.com/what-is-lean-six-sigma/>

Leaders in industry of global logistics strive to find ways to identify inefficiencies and develop their people, processes, and procedures. A Marine logistics officer who is appointed to a fellowship serves as an invaluable asset to these companies. Subsequently, civilian interface should not be limited to current fellowship programs like FedEx. Consideration should be given to any company that may be open to exchange and willing to host a fellowship. Losing the young logistics officer for a short duration of time will pale in comparison to the benefits of a well-rounded logistics officer with new ideas on how they can be more efficient and more effective as a supporting agency. The Lean Six Sigma concept of 8 Wastes (see

Figure 4), known as *muda*, provides a template for identifying inefficient practices and establishing a value-added streamlined flow of logistics that saves time and money. The ideal state of logistical throughput is known as one-piece flow.¹⁹ One-piece flow contradicts the current Department of Defense model of push logistics that typically results in “iron mountains” and excess wastes. As good stewards of fiscal management, the Marine logistics officers of the future must be capable of identifying wastes and then addressing them. By affording the Marine 0402 community the opportunity to complete the Lean Six Sigma courses the Corps gains a well-rounded logistics officer with a keen understanding of constant process improvement and efficient modeling and the individual Marine gains the certification that transfers well into the private sector.



Figure 4: Lean Six Sigma 8 Wastes

Source: <https://goleansixsigma.com/what-is-lean-six-sigma/>

The development of cutting edge logistics officers must include a constant focus on education. Pursuing an advanced degree in the field of logistics should be incentivized and achieving the various levels of Lean Six Sigma should be rewarded. While an advanced degree and Lean Six Sigma certifications hold high value in the private sector, they remain

inconsequential to the career progression of a Marine logistics officer. Marines are not acknowledged for completing this type of training, as completion of the Lean Six Sigma program might be relegated to a single comment on an annual fitness report. By promoting initiative and dedication to lifelong learning, the Marine Corps can potentially retain some of the best logistical talent in its ranks. Lean Six Sigma is a civilian program and should not be part of our base curriculum. However, those wishing to advance their understanding of logistics by taking that program of study should be rewarded for doing so. A Lean Six Sigma Black Belt, a highly coveted certification in the civilian logistical world, bears little recognition on the evaluation of a Marine logistics officer, despite the inherent capabilities that accompany a certification of that level.

An advanced degree in logistics or supply chain management, a hallmark of professionalism and dedication, is of no consequence to the Marine Corps. Educational incentives that promote advanced logistical learning do not currently exist. The civilian logistical agencies groom their own logisticians and promote education and internships abroad in order to generate a broader understanding of logistics and supply chain management. Through incentive and recognition, the Marine Corps can support the aspirations of the logistics officer, reap the benefits of a more highly trained professional, and deliver a higher caliber logistician back to the American people. That individual may be later inclined to assist the Marine Corps further by providing a venue for education, potential internship, or scholarship within the same field. An investment in knowledge will, undoubtedly, pay large dividends to the collective logistical competency of the Corps.

While there are existing programs that provide logistical fellowships for field-grade officers, more emphasis should be placed on CIV LOG internships for junior logistics officers. Any idea should be considered and special emphasis should be placed on international fellowships. Examples include, but are not limited to: Toyota, John Deere, Walmart, UPS,

General Electric, Boeing, XPO Logistics, J.B. Hunt, DHL, Ryder, Penske, and C.H. Robinson Worldwide. An internship or fellowship request protocol must be created for any Marine logistics officer who develops a viable contact with a civilian logistics agency and recognizes the potential for shared learning. The individual selection, defined timeline, reporting requirements, and payback of that fellowship can be outlined in detail by HQMC and the lessons learned can be archived for future logisticians to utilize. The private sector benefits by gaining valuable military perspective and immediate feedback from a selected leader in the field. The Marine Corps benefits by gaining a logistics officer that now possesses unique experience and can implement the effective practices, policies, and procedures that they learned.

Logistics Gateway Concept

Global leaders in logistics not only focus on the education and training of their logistical professionals but they also heavily rely on Logistics Information-Technology (LOG IT) architecture to provide real-time running logistical estimates, provided by internal and external feedback mechanisms, that allow for anticipatory response. Top tier logistics companies utilize cloud-based central repositories of shared knowledge and data, often encrypted, to serve as a “one-stop-shop” for all. Despite identifying information as a new warfighting function, the Marine Corps does not currently have this resident capability. Furthermore, the ongoing friction that results from logistical reliance on unclassified LOG IT architecture in an operational environment that primarily uses classified networks is immeasurable. The digital data ecosystem can enhance or degrade operational capability but without the proper shielding it can also be breached by our enemy. Insufficient LOG IT is a soft target cyber-attack and consideration must be given to protect the access to logistical data and metrics. A central location for logistical data that is supported by IT architecture is also obsolete.

Military One Source serves as a great example of a platform that offers assistance and information to military members regarding any and all questions.²⁰ By establishing a logistical gateway, the Marine Corps could provide logisticians unabated access to assistance across the full spectrum of logistics. The entry-level logistics officer could enroll via Common Access Card (CAC) and be granted navigation of this gateway in a garrison and deployed environment. Utilizing an internal search button, this gateway would speed up the data mining process for information. Additionally, the application to receive daily LOG updates and provide blog comments would aid in keeping logisticians abreast of current issues in their logistical community. Cloud-based technology makes data storage easy and provides secure access to authorized users.

Cloud-based subject matter and content could include Geographical Combatant Command Logistical Common Operation Picture (LOG COP), templates for LOG playbooks, references, doctrinal publications, manuals, LOG unit hyperlinks that also include adjacent services, external agency hyperlinks (TRANSCOM, DLA, DOS, USAID, US Customs, etc.), Civilian LOG hyperlinks (FedEx, DHL, etc.), LOG lessons learned archive, systems interface (GCSS-MC, JOPES, etc.), equipment resources, and educational resources. The ability to access podcasts and previously recorded LOG training venues could serve as a valuable commodity for logisticians. Continued education opportunities, military and civilian, through a logistical gateway bolster the learning continuum and enhance the development of multifunctional logistics officers. Finally, the function of the logistical gateway to reach actual logistics subject matter experts (LOG SME) in their particular field will allow for flat communications throughout the Corps and assist in the development of a better equipped multifunctional logistics officers.

Fiscal Management: Money as a Weapons System Concept

In today's military, fiscal management is a critical skill set that can often define the success or failure of the unit. Entry-level logistics officers are not receiving sufficient fiscal training to perform the duties expected of them. The unit funds and Consolidated Memorandums of Receipt (CMR) remain important to understand but pale in comparison to the fiscal responsibility a logistics officer may be handed in a true operational environment. Understanding the authorities and responsibilities inherent to Operation and Maintenance (O&M) funds, Military Construction (MILCON) funds, and Overseas Contingency Operations (OCO) funding allows the logistics officer to be a more efficient, more effective piece of the MAGTF nucleus. Early familiarization of Acquisition and Cross-Service Agreements (ACSA) forms a solid knowledge base for deployed logistics officers. Understanding how ACSA can help or hinder logistical support in a global environment will better assist the commander with key decisions based on LOG assessments of supportability.

The logistics officer may also be required to have an in-depth understanding of where and how training and operations utilize appropriate funding. Additionally, young logistics officers should be exposed to contract management, another critical piece of the support network, during entry-level training. Operational Contract Support (OCS) is a vital component of the JLEnt. Though a specific contingency contracting officer designation exists, the requirement to understand the capabilities and limitations of contracting in a garrison and deployed environment belong to the logistics officer. Adjacent to contracting, disbursing officers and comptrollers play a critical role. These capabilities, when aligned, empower a Logistics Distribution Cell (LDC) with the organic ability to conduct independent contract support. By understanding the "money as a weapons system" concept, logistics officers can provide more accurate and timely support while abiding by the rules and regulations set forth

in the directives for fiscal management. Only through deliberate training can the full capabilities of the LDC be utilized.

Sound fiscal management begins with a clear understanding of authorities and responsibilities that can aid in the development of a clear, concise logistical narrative to the commander. Logistics officers play a critical role by understanding the limitations and capabilities of authorities and associated funding availability. Implementing deliberate blocks of fiscal training into LOC curriculum that include Title 10, Title 14, and Title 32 responsibilities, MFP-11, OCO funds, O&M funds, ACSA, OCS, and the LDC concept would set the foundation for a better equipped logistics officer to meet the challenges of the future operating environment. Planting the seeds early will allow logistics officers the opportunity to better understand the complexity of fiscal management and, in doing so, arm the logistics officer with the ability to provide intelligent logistical estimates to the commander. Additionally, understanding where to reference the authority and where to seek assistance regarding specific fiscal matters can provide invaluable to the logistics officer. Creating the mindset that money is a weapons system and investing early in the true multifunctional logistics officer will yield positive results.

The Professional Logistician

Despite the inevitable obstacles involved with change, LOG transformation can pay huge dividends if the Corps embraces the idea. There must be a provision to attract and keep logistics professionals. Giving a logistician, who has previously earned a degree from an accredited program, the opportunity to serve in that capacity will be beneficial to the individual and, as resident logistical capability grows, enhance the flexibility, adaptability, and responsiveness of Marine Corps logistics. The legacy system of officer assignment remains flawed and the ability to identify and utilize unique talent does not currently exist. As a result,

highly educated engineers become adjutants, communications specialist become artillery officers, and logisticians may or may not ever get to sharpen their skill set depending on the MOS assigned to them at The Basic School (TBS). In any major successful corporation, a common theme is the ability to identify and place talent to maximize impact on the organization. The discussion and debate over talent selection and placement continues but it's time to change.

Change often has an impact that requires adjustment and the perpetual reluctance to adjust training timelines indicates professional complacency. If LOC needs to be longer and more demanding in order to encompass key topics, so be it. The officers attending LOC have all completed undergraduate degree programs from accredited institutions of higher learning. Adapting to a curriculum more akin to a graduate program will further assist the continued professional development of the individual Marine logistics officer. The inability to add or drop relevant subject matter limits the progression of Marine Corps logistics. Colleges and universities constantly change their curriculum based on best practices and current themes. The implications to manpower can be overcome, timelines adjusted, and budgets revisited. Marine Corps Training and Education Command (TECOM) owns the curriculum and changing it takes time, money, and substantial effort. In comparison, a college professor can change curriculum with a simple endorsement from the provost. The same flexibility should be given to the Commanding Officer of LOS. Detailed selection of the Commanding Officer of LOS and full support from TECOM and the DCI&L would facilitate a learning environment that can keep pace with the ever-changing nature of logistics and allow for approved modifications. With increased emphasis on LOG MOD, billet assignments for young company-grade logistics officers within the construct of the DCI&L could provide fresh perspective. The career path and professional development of the Marine must be considered but even a short-term

assignment may prove beneficial if the ideas of the next generation of logistics officers can be heard unfiltered.

Conclusion

Changing the way an organization views logistics, inevitably, takes substantial time and effort. However, changes can be made immediately to start the cycle of change that will have lasting impacts to the organization. Specifically, by providing education in the four key areas mentioned previously, Joint Logistics, Logistics Support of Special Operations Forces (SOF), Interface with Civilian Logistics (CIV LOG), and Fiscal Management, the Marine Corps can immediately enhance logistical capability.

Transformational change can start with small modifications to current policy. LOC has begun to utilize adult learning methods and the continued application of small group engagement, self-guided learning, scenario-based simulations, case studies, and guest instructor interface will further promote the professional development of logistics officers. If the additional time for added instruction is not an option, adjustments to the current curriculum may be a viable option. Specific recommendations for possible adjustments to the current LOC periods of instruction (POI) (ref Appendix A) are as follows:

1. **Drop:** Intro to Publications POI and Publications Management POI. The access to publications is now completely electronic and management of publications is not a primary responsibility of a logistics officer. The archives of hard copy publications are obsolete and logistics officers need only to be pointed in the right direction for access.

2. **Add:** Introduction to the J-LEnt. A 2-hour POI that focuses on joint logistics and the integral components of the J-Lent that support global integration would help the logistics officer form an initial framework for joint logistics, which they will encounter in every

operational environment. The Joint Logistics Course can be introduced as an opportunity for follow-on training through the Army Logistics University, Ft. Lee, VA.

3. **Drop:** Forging Operations. While a fun event, the application of fording tactical vehicles should be the primary responsibility of the operator. This event takes several hours and is rarely a concern during tactical convoy operations. Platform capabilities and limitations are taught to operators who advise the convoy commander on what a tactical vehicle can and cannot accomplish in a field environment.

4. **Add:** USAID JHOC. This 2-day fully funded course that can be scheduled for each LOC by direct coordination with USAID. USAID OFDA conducts JHOC training via mobile training teams. By planting the seed for HADR early, Marine logistics officers can stand better prepared to face the complexity of this unique mission set. The UN-CMCoord course can be introduced briefly and set the stage for logistics officers that may be assigned later to a Crisis-Response MAGTF or a key billet that deals with global HADR. Additionally, case studies for current HADR missions can be used for LOG planning and the Marine Corps Planning Process POIs.

5. **Modify:** Unit/Air/Amphibious Embark POI. Forcing logistics officers to construct load plans does not help them become a MAGTF logistician. Interface with a Combat Cargo Officer (CCO) and embark Marines helps develop an understanding of priority onload/offload. Better yet, direct interface with an actual onload/offload proves even more valuable. The Camp LeJeune area is constantly in flux and through coordination with 2nd Marine Logistics Group (2D MLG), LOC can get logistics officers invaluable hands-on training as they assist actual embarkation/debarkation operations at the beach, on the airfield, or at the port facility.

6. **Add:** MARSOC intro to SOF LOG. Including a 2-hour POI that focuses on SOF LOG integration, MFP-11 funding, JSOU, and MARSOC LOG capabilities will provide

understanding and familiarization for future support. Furthermore, MARSOC has an opportunity to interface with the next generation of logistics officers that will be providing combat service support functions for SOF. The development of a MARSOC SOF LOG course requires further evaluation and assessment. However, such a course may prove valuable to the individuals who attend, MARSOC, and the entire Marine Corps as a more diverse more capable logistics officer continues to be groomed.

7. **Drop:** Preventative Maintenance Checks and Services (PMCS) POI and Supervise PMCS POI. While applicable if assigned to a Motor Transport unit, PMCS is a primary operator responsibility. A logistics officer can quickly understand PMCS by simply reviewing the checklist and watching a PMCS in progress.

8. **Add:** Fiscal Management POI. Building in a 4-hour POI that includes Title 10, Title 14, and Title 32 authorities, O&M funding, intro to MILCON, OCO funds, ACSA, and OCS will greatly enhance the logistics officer's understanding of fiscal management. Utilizing guest instructors from the finance course and operational contract support will allow for an open dialogue and foster a sense of mutual support in the future.

9. **Add:** LOG education review. A 2-hour POI that includes a review of the 0402 Career Path, CMC LOG Fellowship overview and application requirements, intro to Lean Six Sigma (and incentives to certify), and a review of continued LOG education opportunities will pay dividends. Directing logistics officers to resources such as the Smeal College of Business at Penn State University shows the commitment of the Corps to develop world-class logisticians. Creating an environment where logistics officers remain hungry for knowledge, can think outside of DoD logistics, and understand the importance of professional competency is key to transforming logistics capability as an organization.

MCLOG is the process owner of functional logistics for the Marine Corps. Many of the aforementioned subject areas, such as joint logistics, can be managed through MCLOG. A

synchronization of logistical structure must be conducted to ensure unity of effort. Immediate emphasis should be placed on the assessment of current LOG IT infrastructure and the way forward. The “LOG gateway” or “LOG hub” initiative should, at a minimum, include initial interface with MCLOG, Marine Forces Cyberspace Command (MARFORCYBER), and the DCI&L to ensure fusion. The facts remain, there is not a cloud-based central repository of logistical data for logistics officers to access and USMC LOG IT is currently at risk. Creating a central local for logisticians to data mine, share concepts, and access information for all functions of logistics will immediately improve organizational efficiency and capability. Entry-level logistics officers are more familiar with IT networks and most have relied on cloud-based programs and applications in great depth prior to becoming Marines. Securing Marine Corps LOG IT infrastructure to ensure our enemy does not gain the ability to access key data and metrics is essential to mission success.

The Marine Corps must also develop a way to attract and retain marquee logistics officers. The ongoing debate regarding MOS selection and follow-on placement must be amplified. Talent selection and placement is a staple of good business practice and, as a result of current policy, logisticians of the highest caliber are migrating away from and out of the Corps. Private sector logistics agencies guarantee jobs in the field and place high emphasis on advanced education in logistics and supply chain management. Currently, the Marine Corps does not. Until this change, the mass exodus of logistics officers will continue to pose a problem.

The bureaucracy of change, a critical vulnerability, must be overcome. Changing the manner in which Marine logistics officers are trained will require substantial effort. It requires adaptation from several levels and the implications of change will resonate throughout the Corps. It requires substantial efforts from manpower, education, and training and will, no doubt, require additional funding and time to implement. However, an investment in the

proficiency of the Marine logistics officer promotes LOG MOD and impacts organizational mission success in the future.

These recommendations for initiating and implementing change will likely be met with some skepticism. The fact remains, global logistics continuously changes and strategic end-to-end supply chains are more advanced than ever. The Marine Corps must seize the opportunity and lead the way by establishing innovative new policies that empower logistics officers to champion innovation. There will be obstacles that include viable funding, manpower adjustment, current policy, training, and legacy-minded blockades. Regardless, the operating environment of the future will demand bold adjustments from the logistical community. Sub-par logistics officers yield sub-par results and the obstacles faced then will be directly linked to the bureaucracy of change we face now. Rear Admiral Henry E. Eccles said, “Sound logistics forms the foundation for the development of strategic flexibility and mobility. If such flexibility is to be exercised and exploited, military command must have adequate control of its logistic support.”²¹ This same emphasis that is placed on command and control must be placed on Marine Corps logistics in order to meet the challenges of the future operating environment. Logistical prowess of the Corps is predicated on a dedicated investment in the individual Marine logistics officer. USMC logistical force structure and readiness enable mission success. Much like the challenges that face logistics officers, innovation is a complex process. Only by distilling complexity into actionable parts can the Marine logistics community facilitate change and move confidently forward into the future. Change is happening despite the Marine Corps’ inability to keep pace and ignoring the ongoing transformation of global logistics will result in continued erosion of logistical capability and capacity. Taking action to address Joint Logistics, Logistics Support of Special Operations Forces (SOF LOG), Interface with Civilian Logistics (CIV LOG), and Fiscal Management

enhances the capabilities of the logistics officer, fuels innovation initiatives, and helps the Marine Corps begin to break free from the LOG jam.

¹ Sun Tzu, *The Art of Warfare*, trans. Roger T. Ames (New York: Random House, 1993): 120.

² Kirk Spangenberg (Col USMC), "Putting the 'L' in MAGTF," *The Marine Corps Gazette* Volume 93, Issue 8 (August 2009): 10.

³ *Ibid.*, 13.

⁴ *Ibid.*, 17.

⁵ *Ibid.*, 18.

⁶ Malcolm Knowles, *The modern practice of adult education: Andragogy versus pedagogy*, Rev. and updated ed. (Englewood Cliffs, NJ: Cambridge Adult Education, 1980: 44-45.

⁷ Headquarters U.S. Marine Corps, *Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century*, (Washington, DC: Headquarters U.S. Marine Corps, September 2016): 23.

⁸ Joint Staff, *Joint Publication 1, Joint Warfare of the Armed Forces of the United States*, (Washington, DC: 10 January 1995): IV-1.

⁹ Joint Staff, *Joint Publication 1-02 Department of Defense Dictionary of Military and Associated Terms*, (Washington, DC: 15 February 2016): 121.

¹⁰ Department of Defense, *Directive 5100.46 Foreign Disaster Relief (FDR)*, (Washington D.C.: Office of the Deputy Secretary of Defense, July 6, 2012).

¹¹ <http://www.alu.army.mil/cpce/courses/index.html>.

¹² MOC: 16.

¹³ <https://www.socom.mil/JSOU/Pages/Default.aspx>.

¹⁴ <http://www.socom.mil/about/sof-truths>.

¹⁵ <https://supplychain.smeal.psu.edu/masters/curriculum>.

¹⁶ Vance Trimble, *Overnight Success: Federal Express and Its Renegade Creator*, (New York: Crown Publishers, 1993).

¹⁷ Jeffrey Liker, *The Toyota Way*, (New York: McGraw Hill, 2004): 37-41.

¹⁸ *Ibid.*, 198.

¹⁹ *Ibid.*, 95.

²⁰ <http://www.militaryonesource.mil>.

²¹ Henry E. Eccles, *Logistics in the National Defense*, (Harrisburg, PA: Telegraph Press, May 1959): 10.

Appendix A:
Subjects covered in the current Logistics Officer Course (LOC)

Training & Readiness	Plan for Training
Introduction to Logistics	Logistics Organizations
Marine Corps Planning Process (MCP)	Table of Organization & Equipment (TO&E)
Equipment Characteristics	Introduction to Supply Support
Unit Funds	Determine Requirements
Arms, Ammunition, and Explosive (AA&E) Program	Ammunition Reporting
Engineering Support	Health Service Support
Services Support (Contracting, Postal, Mortuary Affairs)	Food Service Support
Maintenance Support	Combat Operations Center
MLS2	Environmental Compliance
LOGCOM Brief	Supply Accountability Procedures
Maintenance Management Overview	Determine Maintenance Capability
Introduction to Publications	Publication Management
Introduction to GCSS-MC	UMMIPS
Maintenance Forms and Records	Service Requests and Tasks
Tech Research and Requisitioning	Perpetual Inventory Management
Preventative Maintenance Checks and Services (PMCS)	Modifications
Calibrations	Maintenance Related Programs
Corrective Maintenance	Validation/Reconciliation
Inspections	Annual Training Plan
Readiness Reporting	FSMAO Trends Brief
Combat Service Support Area (CSSA) Establishment	Operational Forms and Records
Licensing	Supervise PMCS
Field Expedient Repairs	Recovery Operations
Fording Operations	Cargo Loads
Convoy Planning	Route Reconnaissance
Movement Control	Convoy Organization
Convoy Communications	Counter IED Training
Convoy Defense	Convoy Mission Package
Deliver a Convoy Brief	Command Investigation (wrt Transportation)
Force Deployment Planning and Execution (FDP&E)	MDSS II Functionality
Unit Embarkation Program	Air Embarkation
Amphibious Embarkation	Prepare Unit Deployment/Redeployment
Movement Control Organizations	Landing Support Organizations and Considerations

Appendix B:

Penn State Smeal College of Business

Supply Chain and Information Systems (SC&IS) Base Curriculum

(ref. <https://www.smeal.psu.edu/academic-programs/undergraduate>)

Course #	Course Title
<u>199</u>	<u>Foreign Studies</u>
<u>200</u>	<u>Introduction to Statistics for Business</u> <u>*** view multiple offerings</u>
<u>200H</u>	<u>Honors Introduction to Statistics for Business</u> <u>*** view multiple offerings</u>
<u>299</u>	<u>Foreign Studies</u> <u>*** view multiple offerings</u>
<u>301</u>	<u>Supply Chain Management</u> <u>*** view multiple offerings</u>
<u>310</u>	<u>Introduction to Operations Management</u> <u>*** view multiple offerings</u>
<u>320</u>	<u>Transport Systems</u> <u>*** view multiple offerings</u>
<u>340</u>	<u>Introduction to Supply Chain Analytics</u>
<u>399</u>	<u>Foreign Studies</u> <u>*** view multiple offerings</u>
<u>400</u>	<u>Transport Planning</u>
<u>404</u>	<u>Demand Fulfillment</u> <u>*** view multiple offerings</u>

<u>405</u>	<u>Manufacturing and Services Strategies</u> *** view multiple offerings
<u>405H</u>	<u>Manufacturing and Services Strategies</u> *** view multiple offerings
<u>406</u>	<u>Strategic Procurement</u> *** view multiple offerings
<u>415</u>	<u>Project Portfolio Management and Organizations</u>
<u>416</u>	<u>Warehousing and Terminal Management</u> *** view multiple offerings
<u>421</u>	<u>Supply Chain Analytics</u>
<u>421H</u>	<u>Supply Chain Analytics</u> *** view multiple offerings
<u>445</u>	<u>Operations Planning and Control</u> *** view multiple offerings
<u>450</u>	<u>Strategic Design and Management of Supply Chains</u>
<u>455</u>	<u>Logistics Systems Analysis and Design</u> *** view multiple offerings
<u>460</u>	<u>Purchasing and Materials Management</u> *** view multiple offerings
<u>465</u>	<u>Electronic Business Management</u> *** view multiple offerings
<u>494</u>	<u>Research Project</u>

<u>494H</u>	<u>Research Project</u> *** <u>view multiple offerings</u>
<u>496</u>	<u>Independent Studies</u> *** <u>view multiple offerings</u>
<u>496A</u>	<u>**SPECIAL TOPICS**</u> *** <u>view multiple offerings</u>
<u>497</u>	<u>Special Topics</u>
<u>499</u>	<u>Foreign Studies</u> *** <u>view multiple offerings</u>
<u>530</u>	<u>Supply Chain Analysis</u>
<u>540</u>	<u>Transportation in Supply Chains</u>
<u>546</u>	<u>Strategic Procurement</u>
<u>556</u>	<u>Manufacturing Strategy</u>
<u>566</u>	<u>Demand Fulfillment</u>
<u>570</u>	<u>Supply Chain Modeling</u>
<u>594</u>	<u>Research Topics</u> *** <u>view multiple offerings</u>
<u>595</u>	<u>Internship</u>
<u>596</u>	<u>Individual Studies</u> *** <u>view multiple offerings</u>
<u>597</u>	<u>Special Topics</u> *** <u>view multiple offerings</u>
<u>800</u>	<u>Supply Chain Management</u>
<u>801</u>	<u>Supply Chain Performance Metrics and Financial Analysis</u> *** <u>view multiple offerings</u>
<u>810</u>	<u>Transportation and Distribution</u>

<u>812</u>	<u>Demand Fulfillment</u> *** view multiple offerings
<u>814</u>	<u>Logistics and Transportation Management</u> *** view multiple offerings
<u>815</u>	<u>Product Realization: Development, Manufacturing, and the Supply Chain</u>
<u>820</u>	<u>Strategic Procurement</u>
<u>822</u>	<u>Supply Management</u> *** view multiple offerings
<u>824</u>	<u>Strategic Procurement</u> *** view multiple offerings
<u>840</u>	<u>Supply Chain Project Management</u>
<u>842</u>	<u>Manufacturing and Service Operations Planning</u> *** view multiple offerings
<u>844</u>	<u>Global Manufacturing and Service Operations</u> *** view multiple offerings
<u>846</u>	<u>Topics in Supply Chain Management</u>
<u>850</u>	<u>Supply Chain Design and Strategy</u>
<u>860</u>	<u>Supply Chain Transformation and Innovation</u>
<u>896</u>	<u>Individual Studies</u>
<u>5000</u>	<u>APIC Back to Basics</u>
<u>5001</u>	<u>APIC Inventory Control</u>
<u>5002</u>	<u>MRP</u>

<u>5003</u>	<u>Teacher Training In Logistics</u>
<u>5004</u>	<u>Operations Management</u>
<u>5020</u>	<u>R. Hadly Waters Supply Chain Symposium</u>
<u>5021</u>	<u>Hadly Waters</u>
<u>5050</u>	<u>Essentials of Supply Chain Management</u>
<u>5051</u>	<u>Processes and Tools for Supply Chain Success</u>
<u>5052</u>	<u>Aligning Supply Chain Organizations</u>
<u>5053</u>	<u>Forecasting and Inventory Management</u>
<u>5054</u>	<u>Fulfillment Operations Management</u>
<u>5055</u>	<u>Introduction to Supply Chain Analytics</u>
<u>5056</u>	<u>Transportation Operations and Sourcing</u>
<u>6043</u>	<u>MCLEP</u>
<u>6050</u>	<u>Essentials of Supply Chain Management</u>

Bibliography

- Army Logistics University, Joint Logistics Course (JLC),
<http://www.alu.army.mil/cpce/courses/index.html>.
- Barth, Kevin M. "Logistics Training and Education Center of Excellence." *Marine Corps Gazette* Volume 91, Issue 6 (June 2007).
- Chairman of the Joint Chief of Staff. *Joint Publication 3-05, Special Operations*. Suffolk, VA: Joint Education and Doctrine Division, July 2014.
- Colonel Kirk Spangenberg, USMC, personal interview conducted 16 February 2018.
- Colonel Matt Cook, USMC, personal interview conducted on 21 October 2017.
- Colonel Neil Schuehle, USMC (Ret), personal interview conducted on 17 October 2017.
- Commandant of the Marine Corps. *NAVMC 3500.27C Logistics Training and Readiness Manual*. Washington, DC: Headquarters US Marine Corps, 14 OCT 2014.
- Deputy Commandant Installations and Logistics (DCI&L). *CSS Learning Continuum*. Washington, DC: Headquarters US Marine Corps, 05 April 2016.
- Department of Defense. *Directive 5100.46 Foreign Disaster Relief (FDR)*. Washington D.C.: Office of the Deputy Secretary of Defense, July 6, 2012.
- Department of Defense. *Joint Concept for Logistics*. Washington D.C.: Office of the Deputy Secretary of Defense, 6 August 2010.
- Eccles, Henry E. *Logistics in the National Defense*. Harrisburg, PA: Telegraph Press, May 1959.
- Headquarters U.S. Marine Corps, *Logistics Training and Readiness Manual*. NAVMC 3500.27, Washington, DC: U.S. Marine Corps, August 21, 2007.
- Headquarters U.S. Marine Corps. *Marine Corps Operating Concept: How an Expeditionary Force Operates in the 21st Century*. Washington, DC: Headquarters U.S. Marine Corps, September 2016.
- Headquarters U.S. Marine Corps. *MCDP 4 Logistics*. Washington, DC: Headquarters U.S. Marine Corps, February 1997.
- Headquarters U.S. Marine Corps. *MCWP 3-40 Logistic Operations*. Washington, DC: Headquarters U.S. Marine Corps, 2016.
- Headquarters U.S. Marine Corps. *MCTP 3-40 B Tactical Level Logistics*. Washington, DC: Headquarters U.S. Marine Corps, 2016.
- Headquarters U.S. Marine Corps. *MCWP 4-11 Tactical Level Logistics*. Washington, DC: Headquarters U.S. Marine Corps, 2000.
- Headquarters U.S. Marine Corps. *MCTP 3-40 C Operational Level Logistics*. Washington, DC: Headquarters U.S. Marine Corps, 2016.

Headquarters U.S. Marine Corps, *Vision & Strategy 2025*. Washington, DC: Headquarters, U.S. Marine Corps, June 18, 2008.

Joint Special Operations University, <https://www.socom.mil/JSOU/Pages/Default.aspx>.

Joint Staff. *Joint Publication 1, Joint Warfare of the Armed Forces of the United States*. Washington, DC: 10 January 1995.

Joint Staff. *Joint Publication 1-02 Department of Defense Dictionary of Military and Associated Terms*. Washington, DC: 15 February 2016.

Joint Staff. *Joint Publication 4-0 Joint Logistics*. Washington, DC: 16 October 2013.

Knowles, Malcolm and Associates. *Andragogy in action: Applying modern principles of adult learning*. San Francisco: Jossey-Bass, 1984.

Knowles, Malcolm. *The modern practice of adult education: Andragogy versus pedagogy*. Rev. and updated ed. Englewood Cliffs, NJ: Cambridge Adult Education, 1980.

Liker, Jeffrey. *The Toyota Way*. New York: McGraw Hill, 2004.

Lieutenant Colonel Keith Warren, USMC, personal interview conducted on 17 November 2017.

Military One Source, <http://www.militaryonesource.mil>.

Murphy, Paul and Michael Knemeyer. *Contemporary Logistics* (12th edition). New York: Pearson, 2017.

Penn State University, Smeal College of Business, Master of Professional Studies, Supply Chain Management, <https://supplychain.smeal.psu.edu/masters/curriculum>.

Scott, Kevin. *Logistics Modernization in the Marine Corps: Materiel Distribution Center*. BiblioScholar, 2012.

Spangenberg, Kirk (Col USMC). "Putting the 'L' in MAGTF." *The Marine Corps Gazette* Volume 93, Issue 8 (August 2009).

Trimble, Vance. *Overnight Success: Federal Express & Fred Smith, Its Renegade Creator*. New York: Crown Publishers, 1993.

Tzu, Sun. *The Art of Warfare*. Translated, with introduction and commentary, by Roger Ames. New York: Random House, 1993.

USAID. *Field Operations Guide for Disaster Assessment and Response, Version 4.0*. Washington D.C.: OFDA, 2005.

USAID Office of Civilian-Military Cooperation, <https://www.usaid.gov/military>.

United States Special Operations Command, SOF Truths, <http://www.socom.mil/about/sof-truths>.

II MEF, *Marine Forces Logistics Playbook (unclass) Edition 1*, Camp LeJeune, NC, 01 May 2013.

Glossary

3D Printing- refers to processes in which material is joined or solidified under computer control to create a three-dimensional object.

ACSA- Acquisition Cross-Servicing Agreements are applicable worldwide to acquire logistics support, supplies, and services directly from or provide them to a foreign government of organization (such as NATO or UN). *Ref DOD Directive 2010.9

AI- Artificial Intelligence is also called machine intelligence (MI) is intelligence demonstrated by machines, in contrast to the natural intelligence (NI) displayed by humans and other animals.

ALU- Army Logistics University, located in Ft Lee, VA.

Autonomous Platform- any platform that is capable of sensing its environment and navigating independently without human input.

CAC- Common Access Card

CIV- Civilian

CMR- Consolidated Memorandum of Receipt

Coalition- an alliance for combined action that includes a collaborative effort amongst different states.

CPI- Constant Process Improvement

DAFL- Direct Authority for Logistics

DCI&L- Deputy Commandant of Installations and Logistics

DLA- Defense Logistics Agency

DOS- US Department of State

GCSS-MC- Global Combat Support System- Marine Corps

HADR- Humanitarian Assistance Disaster Relief

ITC- Individual Training Course, a 7-month SOF training course led by MARSOC

JHOC- Joint Humanitarian Operations Course, led by USAID-OFDA

JLC- Joint Logistics Course, led by ALU- Ft Lee, VA

JLEnt- Joint Logistics Enterprise. Comprised of organizations, authorities and processes across the full spectrum of logistical support.

Joint- annotates a combined effort among more than one DOD service (USMC, Army, Navy, Air Force).

JOPES- Joint Planning and Execution System

JOPP- Joint Operational Planning Process

JSOU- Joint Special Operations University

LDC- Logistics Distribution Cell

LNO- Liaison Officer

LOC- Logistics Officer Course

LOG- Logistics

LOG MOD- Logistics Modernization

LOS- Logistics Operations Schools, located in Camp Johnson, NC

MAGTF- Marine Air Ground Task Force

MARSOC- Marine Corps Forces Special Operations Command

MCLOG- Marine Corps Logistics Operations Group

MFP-11- Major Force Program-11. Specific appropriation funding for USSOCOM

MILCON- Military Construction

MOC- Marine Operating Concept

MRTC- Marine Raider Training Center, Camp LeJeune, NC

MSOS- Marine Special Operations Schoolhouse, now the MRTC

Muda- term used by Lean Six Sigma for “waste”

NLI- Naval Logistics Integration

Non-State Actor- an individual or organization that has significant political influence but is not allied to any particular country or state

O&M- Operations and Maintenance

OCO- Overseas Contingency Operations

OCS- Operational Contract Support

OFDA- USAID Office of Foreign Disaster Assistance

SC&IS- Supply Chain and Information Systems

SCRM- Supply Chain Risk Management

SME- Subject Matter Expert

SOF- Special Operations Forces

TECOM- Training and Education Command, USMC

Title 10- Title 10 of the United States Code outlines the role of armed forces in the United States Code. It provides the legal basis for the roles, missions and organization of each of the services as well as the United States Department of Defense.

Title 14- outlines the specific role of the United States Coast Guard within the parameters of the United States Code.

Title 32- outlines the specific role of the United States National Guard within the parameters of the United States Code.

TRANSCOM- US Transportation Command

UN-CMCoord- United Nations Humanitarian Civil-Military Coordination Course

UN-OCHA- United Nations Office for the Coordination of Humanitarian Affairs

USAID- United States Agency for International Development

USSOCOM- United States Special Operations Command