Logistics in the Marine Expeditionary Force: Supporting the Future Fight

A Monograph

by

Major H. Dean Weeks, Jr.
United States Marine Corps

School of Advanced Military Studies
US Army Command and General Staff College
Fort Leavenworth, KS

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Monograph Approval Page

Name of Candidate: Major H. Dean Weeks, Jr.

Monograph Title: Logistics in the Marine Expeditionary Force: Supporting the Future Fight

Approved by:

//signed/22 MAR 21/JMC//, Monograph Director
John M. Curatola, PhD

//signed/22 MAR 21/BKE//, Seminar Leader
Brit K. Erslev, COL

//signed/12 May 21/BAP//, Director, School of Advanced Military Studies
Brian A. Payne, COL

Accepted this 20th day of May 2021 by:

, Assistant Dean of Academics for Degree Programs and Research, CGSC
Dale F. Spurlin, PhD

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Abstract

Logistics in the Marine Expeditionary Force: Supporting the Future Fight, by Major H. Dean Weeks, Jr., 42 pages.

Where Marine Corps logistics units are assigned and arrayed within the Marine Expeditionary Force (MEF) must be reexamined to meet the demands of the envisioned future fight. The ability to fight in a close, confined, and potentially contested environment is predicated on responsive logistics. The Marine Corps must evaluate the responsiveness and flexibility of logistics capability in the MEF, and whether changes in force structure meet the Commandant of the Marine Corps' top priority of force design. The Marine Corps must realign logistics capability internally to the MEF to fully adhere to the strategic guidance articulated in the 2018 National Defense Strategy (NDS), 2019 Commandant's Planning Guidance, and Force Design 2030. The Marine Corps' ability to conduct high-end crisis response against near-peer or pacing threat is diminished given the current organization of the MEF. This is even more evident when considering the NDS's global operating model and the requirement for the Marine Corps to operate within both the contact and blunt layers throughout the Indo-Pacific Area of Responsibility.

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Abbreviations

A2/AD	Anti-Access/Area Denial
ACE	Aviation Combat Element
AOR	Area of Responsibility
CLB	Combat Logistics Battalion
CLR	Combat Logistics Regiment
CMC	Commandant of the Marine Corps
CPG	Commandant's Planning Guidance
CSSG	Combat Service Support Group
DC	Deputy Commandant
DS	Direct Support
EABO	Expeditionary Advanced Base Operations
ESB	Engineer Support Battalion
ESB	Engineer Support Battalion
FMF	Fleet Marine Forces
FSSG	Force Service Support Group
FY	Fiscal Year
GCE	Ground Combat Element
GS	General Support
GySgt	Gunnery Sergeant
H&S	Headquarters and Services Company
HQ	Headquarters
HQMC	Headquarters Marine Corps
I&L	Installations and Logistics
LCC	Logistics Chiefs Course
LCE	Logistics Combat Element

LOC	Lines of Communication
LOS	Logistics Operations School
LSB	Landing Support Battalions
LUE	Logistics Units of Employment
MAGTF	Marine Air-Ground Task Force
MCLOG	Marine Corps Logistics Operations Group
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MGySgt	Master Gunnery Sergeant
MHE	Material Handling Equipment
MLG	Marine Logistics Group
MLR	Marine Littoral Regiment
MOC	Marine Corps Operating Concept
MOS	Military Occupational Specialty
NDS	National Defense Strategy
OAG	Operations Advisor Group
OE	Operating Environment
OIF	Operation Iraqi Freedom
SDA	Special Duty Assignments
Sgt	Sergeant
SSgt	Staff Sergeant
TFSMS	Total Force Structure Management System
TSB	Transportation Support Battalion
Vision 2025	*Marine Corps Vision and Strategy 2025*

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Introduction

> A responsive logistics system makes logistics a force multiplier; a nonresponsive logistics system is an anchor holding back the efforts of the entire organization.
>
> —Marine Corps Doctrinal Publication 4, *Logistics*

Fast forward in time and the year is now 2030. The United States is now engaged in the very fight envisioned by the 38th Commandant of the Marine Corps back in 2020. The conflict is against a near-peer adversary across a distributed and contested environment in the Pacific. US Marine forces, distributed in small teams with multi-domain capabilities across hundreds of islands, are to deter and disrupt the adversary from engaging with US and coalition partners. In this setting, a Marine Littoral Regiment (MLR) requires rapid resupply missions to multiple locations while engaged with the enemy. At one location on an atoll internal to the MLR's area of responsibility (AOR), a team of Marines urgently requires a single pallet of ammunition for their very survival. The request originated from a subordinate infantry battalion frantically attempting to support a group of Marines just beyond the recently secured beachhead. Unfortunately, the Marine Logistics Group (MLG) delayed the delivery of this critical ammunition, due to a cumbersome requesting chain. The MLG stripped the supporting logistics battalion of its critical capabilities to provide support as Direct Support (DS) Combat Logistics Battalions (CLB) ten years earlier. Those resources and capability were reallocated and centralized in the MLG. The reorganization inadvertently created an overly bureaucratic MLG. This stifled the ability of a combat formation to seize the initiative due to self-inflicted culmination due to resource consolidations. Lastly, the logistics Marines facilitating the support had antiquated training and lacked the versatility to be successful in a distributed and complex environment.

In the remote location in the Pacific in 2030, the simple requisition for an ammunition resupply navigated the established lines of communication (LOC). The MLR submitted the request to the DS CLB, which lacked the capability for loading a single pallet on a tactical

vehicle. Since the DS CLB can no longer load its vehicles based on the organizational changes between 2018 and 2020, the request is sent to the Combat Logistics Regiment (CLR). In the force design solidified in 2020 with reactivated Landing Support Battalions (LSB), the CLR no longer possesses equipment or personnel to support the request. The CLR must now route the request to the MLG for processing. With no regimental headquarters (HQ) for Engineer Support Battalion (ESB) or LSB as stand-alone battalions, the MLG now acts as a regimental headquarters, and tasks one of those battalions to support the original request of loading the pallet. Due to the convoluted process illustrated above, the MLG must now create an additional request tasking itself to transport and deliver the single pallet of ammunition.

Ten years before the date of the single pallet request, the Marine Corps finalized the force structure of the MLG, which serves as the Logistics Combat Element (LCE) of the Marine Expeditionary Force (MEF). The MEF is the largest Marine Air-Ground Task Force (MAGTF) formation. It is tailorable in size, capability, and capacity based upon mission assignment. The change in force structure for logistics units internal to the MEF was predicated on the Commandant of the Marine Corps' (CMC) *2019 Commandant's Planning Guidance* (CPG) and reinforced by *Force Design 2030* published in March 2020. The CPG attempted to fully adhere to the strategic guidance illustrated in the *2018 National Defense Strategy* (NDS). The changes in force structure within the MEF increased capacity for the MLG by consolidating the preponderance of logistics capabilities under one command and functionally aligned various battalions. Unfortunately, the Marine Corps failed to realize the unintended consequences of resource consolidations for logistics support until the structure was tested in conflict ten years later.

General David H. Berger, the 38th CMC, believed the convoluted process illustrated above was neither sustainable nor suitable in future operating environments. As stated by former Secretary of Defense James N. Mattis, "we must evolve innovative operational concepts, which

includes the way we organize forces."[1] The ability to fight in a close, confined, and potentially contested environment is predicated on responsive logistics. The Marine Corps must evaluate the responsiveness and flexibility of logistics capability in the MEF, and whether the changes in force structure meet the CMC's top priority of Marine Corps force design at the operational level of war.

The purpose of this research topic is to determine whether the ongoing logistics organizational changes within the MEF are maximizing lethality and providing the type of force required for warfare in a distributed and contested environment. This research identifies gaps and recommends a future support structure for the MEF that provide the most responsive internal and external support. Furthermore, this treatise proposes a streamlined command relationship between supporting and supported units that increases operational reach in the global operating model. At the heart of the topic is this question: Does the realignment and consolidation of resources in the Logistics Combat Element (LCE) diminish operational reach and crisis response capability against a near-peer or pacing threat?

The NDS explains that the global operating model is comprised of four layers: contact, blunt, surge, and homeland. They are purposely designed to help Marines compete more effectively below the level of armed conflict; delay, degrade, or deny adversary aggression; surge war-winning forces and manage conflict escalation; and defend the US homeland.[2] Additionally, the global operating model is "how the Joint Force will be postured and employed to achieve its competition and wartime missions."[3] The focus of the Marine Corps under Berger's direction is to focus the warfighting planning within the contact or blunt layer.

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[1] US Secretary of Defense, *2018 National Defense Strategy* (Washington, DC: Office of the Secretary of Defense, 2018), 7, accessed September 21, 2019, https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf.

[2] US Secretary of Defense, *2018 National Defense Strategy*, 7.

[3] Ibid., 7.

The significance of this topic is the connection of operational art and design to the ongoing refinements to force design for the Marine Corps. Based on research to date, the current organization of the MEF diminishes the Marine Corps' ability to conduct high-end crisis response against a near-peer or pacing threat. The changes generate a requirement to research and investigate whether the impacts of organizational change to the MEF increases or diminishes operational reach and lethality in a contested and distributed environment. This could have a meaningful impact on the lethality of the Marine Corps in the future.

Problem Statement

To fully adhere to the strategic guidance articulated in the 2018 NDS, 2019 CPG, and *Force Design 2030*, the Marine Corps must realign logistics capability internal to the MEF. The Marine Corps' ability to conduct high-end crisis response against near-peer or pacing threat is diminished given the current organization of the MEF. This is even more evident when considering the NDS's global operating model and the requirement for the Marine Corps to operate within both the contact and blunt layers throughout the Indo-Pacific AOR.

Current Research Question

The primary research question for this monograph is: Does the re-alignment and consolidation of resources in the LCE of the MEF diminish operational reach and crisis response capability for the MEF against a near-peer or pacing threat? Additional questions that must be answered to support the primary question are: 1) Does the DS CLB assigned to the infantry regiment provide adequate support in a distributed environment? 2) What impact does the realignment of logistics resources have on the MLG's General Support (GS) mission to the MEF? 3) Does the realignment increase lethality and operational reach for MEF in a contested environment? 4) Is the MOS structure and training for logistics Marines adequate to support the future fight in a distributed environment? and 5) What are the impacts to manpower and force structure for Headquarters Marine Corps (HQMC)?

Research Methodology

Through the lenses of history, theory, doctrine, and lessons learned, research will focus on archival material concentrating on the contemporary reasons for previous force structure designs. This effort will also review decisions that led to the Marine Corps' evolutionary process to the current force structure of MLGs and MEFs. This will lay the foundation for understanding how and why the Marine Corps found itself in its current force design. Additionally, analyzing past and present doctrine from the first Gulf War in 1991 to the present day will assist in understanding the current model of the MLG. This lends substantial weight to the importance of how the Marine Corps must revisit how the MLG should be manned, trained, and equipped for future conflicts.

A Recent History of USMC Logistics: From Desert Storm to Iraq

> During times of peace, the most important task of any military is to prepare for war, and through preparedness a military provides deterrence against potential aggressors.
>
> —Marine Corps Doctrinal Publication 1, *Warfighting*

As combat forces constituted and prepared for operations over extended LOCs in support of Operation Desert Storm, the leadership and planners of 1st Force Service Support Group (FSSG) in I MEF quickly realized they required a force reorganization to support the campaign. The 1st FSSG Commanding General during Desert Storm was Brigadier General James Brabham. Under his command, 1st FSSG was the unit responsible for providing combat service support to I MEF. Brabham arrived in theater with the FSSG arrayed in eight battalions providing engineer, motor transport, supply, maintenance, landing support, medical, dental, and services support.[4] The key reason for functionally comprised battalions was the belief they provided flexibility for

[4] Steven M. Zimmeck, *US Marines in the Persian Gulf, 1990-1991: Combat Service Support in Desert Shield and Desert Storm* (Washington, DC: US Marine Corps, History and Museums Division, 1999), 2.

MEF commanders to task organize subordinate units to support specific missions. Additionally, logisticians such as Brabham believed the FSSG should retain capability and capacity in garrison and task organize for specific requirements or during deployments. The types of units created from this construct were Marine Expeditionary Unit Service Support Groups (MSSG), Brigade Service Support Groups (BSSG), and Combat Service Support Groups (CSSG).[5] CSSGs were the logistics units created from the FSSG to support operations during Desert Storm. A concern and potential shortfalls with this model were the lack of training and unit cohesion between the supporting and supported commands.

Prior to the opening salvo of air and ground forces in Desert Storm, there was enough time to sufficiently train and develop unit cohesion between the units while in theater. Through the in-theater training, Brabham identified gaps and deficiencies with his force organization. The training focused on mission-oriented tasks that built greater cohesiveness between supporting and supported units. Additional training refined individual tasks such as rifle and pistol qualifications along with other ancillary requirements for combat. Brabham adjusted his forces to better support the 1st Marine Division and other MEF forces by creating CSSGs. This adjustment ensured the completed training would develop the unit cohesion required for success in combat operations. The change in organization was predicated on the order given by 1st MEF Commanding General, Lieutenant General Walter E. Boomer, to support the wing and division as well as plan to supervise rear area security.[6] General Boomer trusted Brabham implicitly and explicitly. The approved changes resulted in the creation of eight CSSGs of differing sizes in DS of Regimental Combat Teams (RCTs) and Marine Air Groups (MAGs). The forces, equipment, and capability not assigned or attached to the eight CSSGs in DS became General Support Groups (GSGs) and were GS to the two Marine divisions and Command Element (CE) of I MEF.[7] The noteworthy

[5] Zimmeck, *US Marines in the Persian Gulf, 1990-1991*, 2.

[6] Ibid., 34.

[7] Ibid., 81.

success of the FSSG to reorganize and constitute subordinate units in DS and GS relationships with other elements of I MEF created a misconception of success for a generation or more of officers within the logistics community.

In the aftermath of Desert Storm, many senior level officers and planners believed the model used by the FSSG optimized formation and force design for the future. The timely and responsive support provided in Desert Storm created an illusion of validity as illustrated by Daniel Kahneman in *Thinking, Fast and Slow*. Kahneman explains an illusion of validity is a cognitive bias that causes people to overestimate their ability to interpret and predict outcomes accurately. The effect persists even when people are aware of all the factors limiting the accuracy of their opinions.[8] For the purposes of this treatise, the illusion of validity anchored many leaders to believe the successes of 1st FSSG during Desert Storm could be replicated in the future with the same approach.

Per Title 10 of the US Code the Marine Corps "shall be organized, trained, and equipped to provide fleet Marine forces to support the fleet in the seizure or defense of advanced naval bases, the conduct of such land operations as may be essential to the prosecution of a naval campaign, and perform other such duties as the President may direct."[9] The US Marines' involvement in Operation Iraqi Freedom (OIF) fell squarely into the realm of "conduct of such land operations as may be essential to the prosecution of a naval campaign, and perform other such duties as the President may direct."[10] This is important to note, because planners saw multiple parallels between the initial constitution of combat forces in Kuwait and opening days of combat in Iraq with Desert Storm. While it was initially successful and remarkable for the FSSG

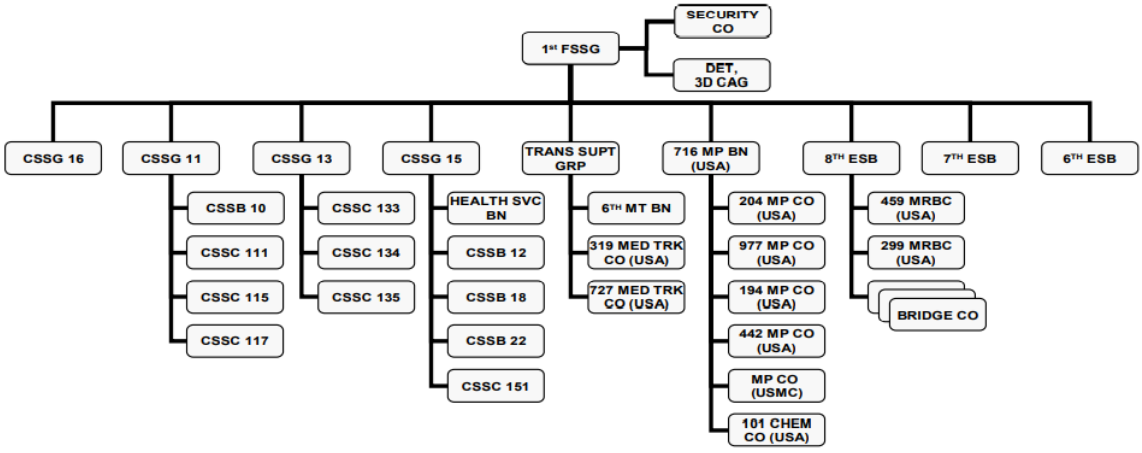
[8] Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus, and Giroux, 2015), 209-211.

[9] US Marine Corps: Composition and Function, *US Code* 10, § 5063 (2010), accessed February 03, 2021., https://www.govinfo.gov/content/pkg/USCODE-2010-title10/html/USCODE-2010-title10-subtitleC-partI-chap507-sec5063.htm.

[10] Ibid.

to support combat forces advancing through Iraq, there are many differences between Desert Storm and OIF. Additionally, the Marine Corps' purpose and mission listed above becomes the bedrock for the Marine Corps to justify the drastic shift from a medium to lightweight force in the future.

In an approximately three-week period, 1st FSSG supported I MEF in heavy combat operations and under fire over a straight-line distance of seven hundred miles covering over 2,300 miles of road networks.[11] The FSSG task organization was optimal for garrison operations and training. However, it was clear that the requirements of large-scale combat operations would stress the systems designed to support I MEF. Once again, leadership and planners of 1st FSSG were faced with the task of reorganizing the FSSG from functional to multifunctional battalions with DS and GS relationships to the supported units and elements.[12]



[11] Matthew W. Blackledge, "Professionals Talk Logistics," *Marine Corps Gazette* 87, no. 8 (August 2003): 50.

[12] Figure 1 illustrates the changes to the FSSG created by Kevin Collins based on the Enduring Freedom Combat Assessment Team (EFCAT).

An important aspect to illustrate is the difference in time for preparations for war as well as the time to train together for greater unit cohesion. In Desert Storm, there was more time for training between the supporting and supported units. During the preparation for OIF, planners spent more time planning the reorganization of the FSSG, which minimized the time units trained together in Kuwait and developed unit cohesion. However, 1st FSSG in OIF planned, trained, and refined operating procedures more sequentially instead of concurrently. Too much time was squandered in planning, which was a major difference between OIF and Desert Storm. The preparations that occurred in theater for Desert Storm focused on refining 1st FSSG's ability to support I MEF and create unit cohesion. Planning, training, and changes to force structure were concurrent versus sequential. But I MEF's focus on planning in OIF created less opportunity for refinement and time for developing unit cohesion through training. The limited training time illuminated the glaring revelation that isolated functional battalions do not work in combat. If the organization of functional battalions and garrison-centric FSSG were optimal, then there would be far less task reorganization across the LCE to support combat operations when called upon. However, the FSSG maintained the new organization throughout the war in 2003 and into stability operations in 2004. Additionally, the Enduring Freedom Combat Assessment Team (EFCAT) highlighted multiple issues with the rapid change in organize such as a lack of training, unit cohesion, and standard operating procedures to support combat in 2003.[13] In August 2005, Lieutenant General Richard L. Kelly, Deputy Commandant for Installations and Logistics (DC I&L), published his report in the *Marine Corps Gazette* that stated FSSGs would realign to provide optimized logistics support for future deployments and minimize friction associated with continually reorganizing to support combat operations.[14] Kelly recognized the FSSG's inability to

[13] Marine Corps Combat Development Command, Enduring Freedom Combat Assessment Team (EFCAT), *Force Service Support Group Garrison Organization and Transition to Expeditionary Operations* (Washington, DC: Government Printing Office, August 2003), 3.

[14] Richard Kelly, "Logistics Modernization: Lethality and Effectiveness," *Marine Corps Gazette* 89, no. 8 (August 2005): 16–19.

support combat operations due to a garrison-friendly organizational structure adversely impacted the lethality of the MEF.

Over the next eighteen months, the FSSG was transformed and renamed as the MLG. The MLG was organized with a DS regiment comprised of a DS battalion aligned to infantry regiments; a GS regiment comprised of functional battalions, such as maintenance, supply, and medical; and a HQ regiment comprised of a headquarters and services company (H&S) battalion as well as battalions that support MEUs. The engineer and dental battalions remained independent and separate, reporting directly to the MLG. The regiments became CLRs and the battalions became CLBs. Figure 2 below illustrates the changes to organization for the MLG.

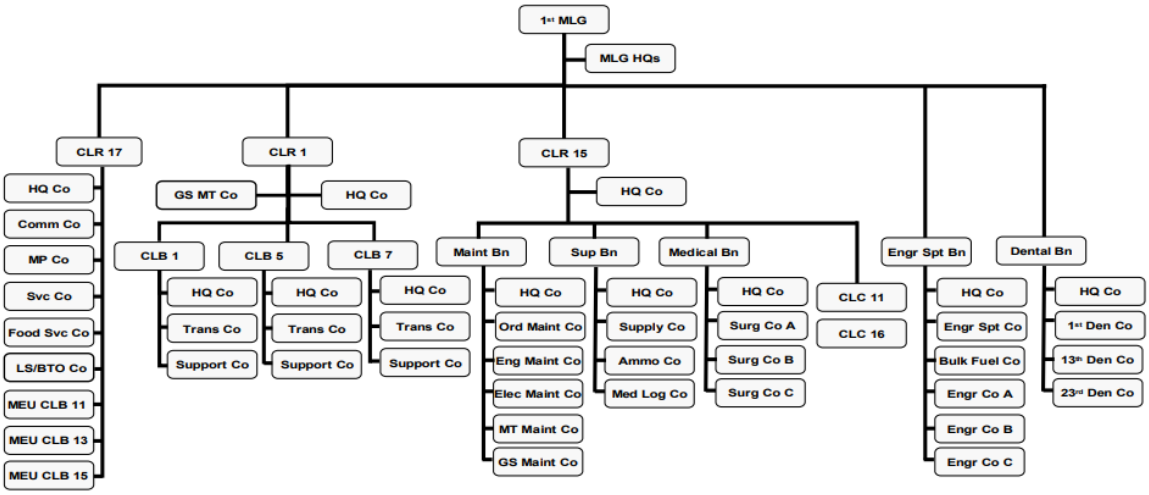


Figure 2. 1st Marine Logistics Group. US Marine Corps, Marine Corps Bulletin 5400, *1st Marine Logistics Group Organizational Structure* (Washington, DC: Government Printing Office, 21 March 2006), 28, quoted in Kevin G. Collins, "Rethinking Logistics Organization of the Marine Expeditionary Force: A MAGTF Solution" (monograph, School of Advanced Military Studies, Fort Leavenworth, KS, 2007), 22, accessed November 09, 2020, https://apps.dtic.mil/dtic/tr/fulltext/u2/a470691.pdf.

The change from the FSSG to the MLG seemed to be the answer on how MEF logistics forces would support future fights. The restructured MLG closely maintained a force structure that operated in garrison as it did in combat. However, these changes only lasted a decade until the desire for change began as early as 2008 with the release of the *Marine Corps Vision and Strategy 2025* (*Vision 2025*).

The perception of success, often overlooked in Desert Storm, was the amount of time in theater that Brabham had to reorganize his units and develop the relationships required for successful DS. Brabham accomplished this through in-theater training because he realized the FSSG's support of the MEF in war did not provide an optimal organizational structure. In addition to training time, there was an abundance of all classes of supplies required to sustain the war. Specifically, anywhere from seven to fifteen days of supplies were prepositioned at various locations during the war with two additional days carried with the RCTs and three days of supplies following in trace.[15] The war took four days. Those nodes were never truly tested nor exhausted, which is why Desert Storm created a fallacy of success. Like any fallacy, once tested under pressure it would fail and required change. This was realized in 2003 during the second war with Iraq: Operation Iraqi Freedom (OIF).

What is Old is New

> Logistics capabilities must first and foremost support our warfighting philosophy, and we must guard against logistics becoming an end unto itself.
>
> —Marine Corps Doctrinal Publication 4, *Logistics*

Since the release of *Vision 2025* in 2008, the Marine Corps' focus shifted to how the force can organize and meet the future operating environment. A concern to meet the challenges of fighting in a contested environment was the logistics support structure. *Vision 2025* specified the LCE "will adapt to complex operating environments and deliver critical support to engaged maneuver units without drawing on combat units for force protection."[16] Additional concerns that needed to be addressed were the command relationships between the supporting and supported

[15] Zimmeck, *US Marines in the Persian Gulf, 1990-1991*, 129.

[16] Headquarters US Marine Corps, *Marine Corps Vision and Strategy 2025* (Arlington, VA: Headquarters US Marine Corps, 2008), 22, accessed September 21, 2019, https://www.hqmc.marines.mil/Portals/142/Docs/MCVS2025%2030%20June%5B1%5D.pdf.

commanders. *Vision 2025* further directed that future concepts of the organizational structure within the logistics community establish habitual relationships with GCE units where feasible.[17]

Between *Vision 2025*'s release in 2008 and the publication of the *Marine Corps Operating Concept* (MOC) in 2016, previously established DS CLBs were never fully integrated with the corresponding infantry regiment. The lack of integration coupled with nonexistent habitual relationships prevented unit cohesion between DS CLBs and the regiments they support. Competing priorities prevented DS CLBs from effectively operating as they were designed. The DS CLB commander had to meet the priorities of the CLR and MLG, which too often were contrary to the requirements for support from division units. The friction came in the form of commanders' priorities. Although the DS CLB mission was to support the corresponding infantry regiment, the CLB rarely supported that unit in garrison and the habitual relationship failed to fully blossom.

Both the MOC and *Vision 2025* identified the weakness in unit cohesiveness and nonexistent habitual relationships as an issue for further review. The MOC also illustrated additional operational concerns for the logistics community to solve. One of the major concerns was capacity and the MLG's ability to increase its warehousing, distribution, and transportation of capabilities. The principal concern was dry goods, water, and fuel.

By 2016, senior officers, who had been company grade officers during Desert Storm and the 1990s, became anchored to their experiences created by the aforementioned fallacy of success. This fallacy is perpetuated by the belief the FSSG in the 1990s was the optimal organizational structure for the MLG to support operations in a distributed environment. The objective of the planners driving change in MLG was to ensure it could support future demands, roles, and missions the Marine Corps may fulfill. Based on their experiences previously illuminated, the common consensus was the MLG had to revert to the previous version of FSSG.

[17] Headquarters United States Marine Corps, *Marine Corps Vision and Strategy 2025*, 22.

With concern for capacity and the requirement for consolidation of resources, DCI&L supported a study that focused primarily on capacity. From 2008 to 2016, combat operations were ongoing with the primary focus of keeping Fleet Marine Force (FMF) units trained for sustained ground combat operations. This was the perfect time to begin the "forward look" and return of the MLG to its former glory in Desert Storm in the 1990s. The MOC, published in 2016, served as the catalyst for senior officials to qualify why the MLG required change.

The MOC opens with a vignette in the form of a lessons learned discussion with the veterans of a fictitious battle called "Operation Littoral Resolve." In the vignette, a MEF is ultimately used for the operation. The premise of the scenario is plausible and closely resembles the fight Berger envisions. However, the MOC is predicated on armed conflict, and the Marine Corps is now focused on operating below the level of armed conflict inside the blunt and contact layers, contrary to the MOC. Additionally, the CLR commander in this vignette describes how his unit successfully supported the MEF, which largely resembles the current operating concept for the MLG. The fictitious CLR commander states, "Our expeditionary logistics concept let us tailor 'right-sized' packages for the supported command—company, platoon, squad—and deliver them by cargo-capable Unmanned Aircraft Systems (UAS)."[18]

For the MOC, there were five "key drivers" that guided the design for future force. Those drivers were complex terrain, technological proliferation, information as a weapon, battle of signatures (electronic warfare), and increasingly contested maritime domain.[19] The central problem identified in the MOC states, "The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures,

[18] Headquarters US Marine Corps, *Marine Corps Operating Concept* (Washington, DC: US Marine Corps, 2016), 3.

[19] Ibid., 5.

and an increasingly non-permissive maritime domain."[20] An option for providing logistics based on the challenges presented in the MOC was the reincarnation of the garrison centric and archaic formation of the FSSG in 1991. However, senior logistics leadership required validation for changing the MLG into the old FSSG. The Research and Development Corporation (RAND) provided further validation in their published study, *Developing a Capacity Assessment Framework for Marine Logistics Groups*. In this study, RAND proposed a structure MLGs could adopt that would assist each MLG, and the units therein, to determine the ability of logistics units to meet current and projected tasks.[21]

After the publishing of the RAND study in 2017, MLG planning focused on increasing its capacity. For senior leaders, capacity was a chief concern for supporting the future force in a distributed environment. An additional concern was how to standardize and measure logistics capacity once the FSSG changed to the MLG. The RAND study addressed how "many of the resulting structural changes led to uncertainty at both the operational and tactical levels concerning how to measure logistics capacity."[22] The structural change referenced in the study was the reorganization of the FSSG to the MLG. The Operations Analysis Directorate (OAD), which is part of the Combat Development and Integration Command, requested RAND develop a standardized method to determine MLG capacity to provide logistics support.[23] Once the decision was made to change back to the previous model of the FSSG from the 1990s, standardizing the MLG measured capacity was paramount to ensure universal understanding.

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[20] Headquarters US Marine Corps, *Marine Corps Operating Concept*, 8.

[21] Joslyn Hemler, Yuna Huh Wong, Walt L. Perry, and Austin Lewis, *Developing a Capacity Assessment Framework for Marine Logistics Groups*, Research report RR-1572-USMC (Santa Monica, CA: RAND Corporation, 2017), ix.

[22] Ibid., iii.

[23] Ibid., iii.

The result of the study provided recommendations to increase capacity, which included resource consolidations, restructuring the MLG, standardizing logistics units of employment (LUE), and centralizing support capabilities for the MEF. The authors of the study prioritized their research efforts by first establishing what constituted LUEs. An LUE was defined as "the personnel and equipment required to accomplish a specific task and determine metrics associated with measure outputs."[24] The LUEs were the cornerstone for the research which aimed to 1) develop unit tables of organization and equipment (T/Os and T/Es) for the LUEs; 2) associate LUEs with mission-essential tasks (METs); 3) establish metrics to gauge how well tasks could be supported; 4) develop a framework for assessing logistics capacity adaptable for any unit; and 5) test the framework for assessing logistics capacity on a Marine Expeditionary Unit (MEU) Combat Logistics Battalion (CLB).[25] Once the research was able to articulate LUEs, test the concept, and apply the concept to other missions such as NEOs and HADRs, logistics leaders had the theoretical evidence without any application to armed conflict to begin the transformation of the MLG.

With the publication of the RAND study, *Developing a Capacity Assessment Framework for Marine Logistics Groups*, completed, senior leaders in the logistics community began developing plans to answer the logistics challenges illustrated in the MOC, especially how the MLG would support the MEF. The study provided information on potential methods the Marine logistics community could use to support operations in a contested and degraded Operating Environment (OE). One proposed solution was that the MEF needed to "redesign our logistics to support distributable forces across a dynamic and fully contested battlespace."[26] The redesign of logistics units within the MEF consolidated logistics capability into functional battalions within the MLG. For example, the MLG removed engineer and landing support capability from DS

[24] Hemler et al., *Developing a Capacity Assessment Framework*, ix–x.

[25] Ibid., x.

[26] Ibid., 9.

CLBs. The MLG consolidated engineer resources in the ESB as well as began the planning for consolidating landing support resources to reconstitute LSB.

Current Operating Model

> Like war itself, our approach to warfighting must evolve, because if we cease to refine, expand, and improve our profession, we risk becoming outdated, stagnant, and defeated.
>
> —Marine Corps Doctrinal Publication 1, *Warfighting*

The Marine Corps is undergoing multiple changes to force design and structure. Those changes are aimed at creating a more agile and adaptive force with greater lethality at lower echelons of command. The changes to the force are largely predicated on the vision and recommendations of the CPG and *Force Design 2030*. Of note, key concepts that are the cornerstone for the new models moving forward include, Littoral Operations in a Contested Environment (LOCE), Expeditionary Advance Based Operations (EABO), and Distributed Maritime Operations (DMO). These concepts require a force designed to prevent and deter an escalation of force towards major conflict within the Range of Military Operations (ROMO).[27] The ROMO encompasses all types of operations within the conflict continuum such as military engagement, security cooperation, deterrence, crisis response, limited contingency operations, and large-scale combat operations. The purpose of LOCE describes "naval operations in the littoral environment in light of emerging threats."[28] The concept provides a unified framework for Navy-Marine Corps innovation, placing a renewed emphasis on fighting for and gaining sea control.[29] This includes employing sea and land-based Marine Corps capabilities to support the sea control fight. EABO consists of capabilities, systems, and other efforts that support operations

[27] Headquarters US Marine Corps, *Force Design 2030* (Washington, DC: US Marine Corps, 2020), 3.

[28] Headquarters US Marine Corps, *Littoral Operates in a Contested Environment* (Washington, DC: US Marine Corps, 2017), 3.

[29] Ibid., 3.

inside an adversary's Anti-Access/Area Denial (A2/AD) defenses.[30] Anti-access consists of actions and capabilities, usually long-range, designed to prevent an opposing force from entering an operational area. Area-denial consists of actions and capabilities, usually of shorter range, designed to limit an adversary's freedom of action within the operational area.[31]

The concepts such as LOCE and EABO are potential answers to how the Marine Corps, in concert with the Navy and Joint Force, would fight within the realm of A2/AD. The planning that shaped the changes to the Marine Corps and led to the current operating model began in 2015 under the 36th Commandant, General Joseph Dunford. The 37th Commandant, General Robert Neller, continued these efforts. General Neller published Fragmentary Order (FRAGO) 1/2016: *Advance to Contact*, which is a continuation of the CPG published by Dunford. FRAGO 1/2016 clearly outlined the mission of the Marine Corps moving forward and laid the groundwork for Berger to propel the force into the future. Neller demanded that Marines will:

> . . . remain the Nation's Crisis Response force; maintain our forward posture and ability to operate in a Joint/Coalition environment; serve as a maritime-based expeditionary force that operates across the ROMO in a five domain battlespace (sea, air, land, cyber, and space); project combat power from a variety of naval platforms and land bases; consist of a highly trained and educated force operating the most modern and technologically advanced equipment available; and, be the most ready force when the Nation is the least ready.[32]

Berger refined the guidance of Neller, which maintained the initial vision developed by Dunford. A few of the major changes implemented thus far under Berger are the divestment of all tank and law enforcement battalions, three heavy helicopter squadrons, three medium-lift tiltrotor

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[30] Arthur Corbett, *Expeditionary Advanced Base Operations (EABO) Handbook: Considerations for Force Development and Employment* (Washington, DC: Headquarters US Marine Corps, May 9, 2018), 3, accessed February 11, 2021, https://mca-marines.org/wp-content/uploads/Expeditionary-Advanced-Base-Operations-EABO-handbook-1.1.pdf.

[31] US Department of Defense, Joint Staff, *Joint Operational Access Concept (JOAC)* (Washington, DC: Government Printing Office, January 17, 2012), i, accessed February 11, 2021 https://archive.defense.gov/pubs/pdfs/JOAC_Jan%202012_Signed.pdf.

[32] Robert B. Neller, *FRAGO 1/2016: Advance to Contact* (Washington, DC: Headquarters US Marine Corps, January 19, 2016), 3.

squadrons, two light attack helicopter squadrons, and all Marine Wing Support Groups. These divestments are making a lighter, more versatile and agile force, which includes the equipment and personnel associated to those units. Additional changes include the expansion or creation of other capabilities, such as greater intelligence, cyber, and information assets and personnel. In Force 2030, Berger stated, "I am not confident that we have identified the additional structure required to provide the tactical maneuver and logistical sustainment needed to execute DMO, LOCE and EABO in contested littoral environments against our pacing threat."[33] His sentiment was an echo from the same concern addressed by the previous two Commandants. The logistics planners at HQMC spent nearly four years slowly changing the MLG from FY18 through FY21. The current operating model of the MLG is the counterargument this disquisition proposes.

As of FY21, the MLG redesigned the CLBs as tailorable units based on mission requirements. This closely resembles the FSSG of the 1990s and Desert Storm. Throughout the redesign process, the MLG stripped the landing support and general engineering capability. DS CLBs retained a motor transportation company and a headquarters element that can form into a combat service support detachment. The culmination of the changes to the MLG occurred with the composition of the recently (FY21) established LSB. This unit was formed by the personnel and equipment stripped from TSB and DS CLBs. Figures 3 through 6 illustrate changes throughout FY18, FY19, FY20, and FY21. Of note are the changes to the CLBs and the creation of LSB.

[33] Headquarters United States Marine Corps, *Littoral Operates in a Contested Environment*, 10.

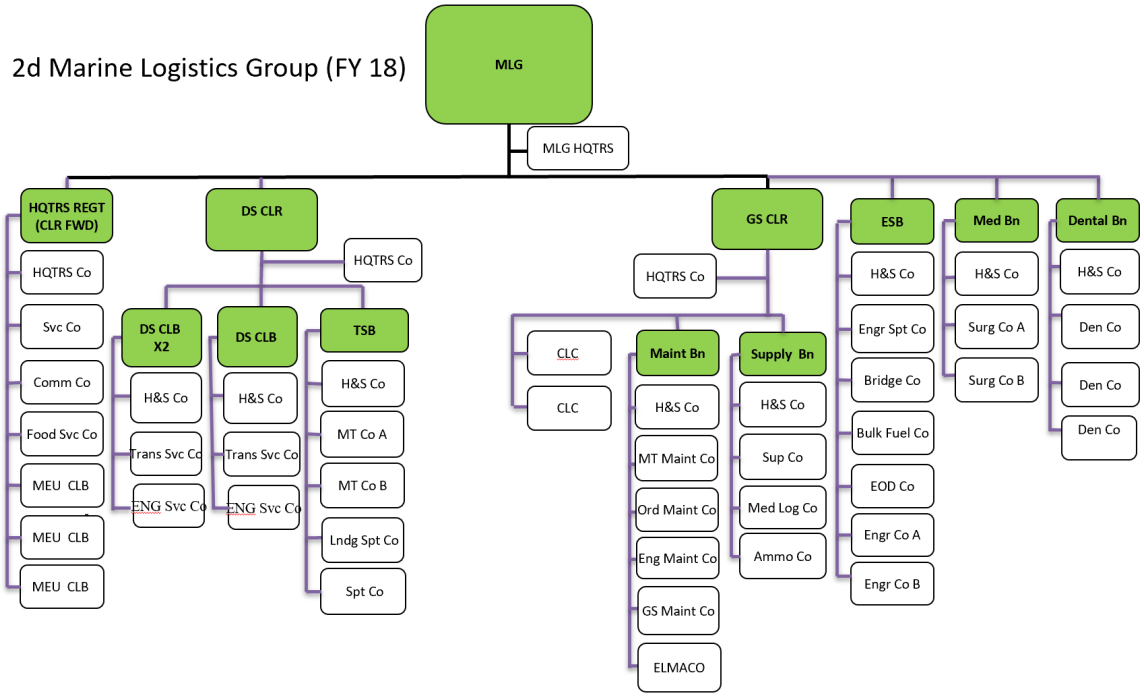

Figure 3. Fiscal Year 18 Marine Logistics Group. Created by author from the Marine Corps Total Force Structure Management System (TFSMS).

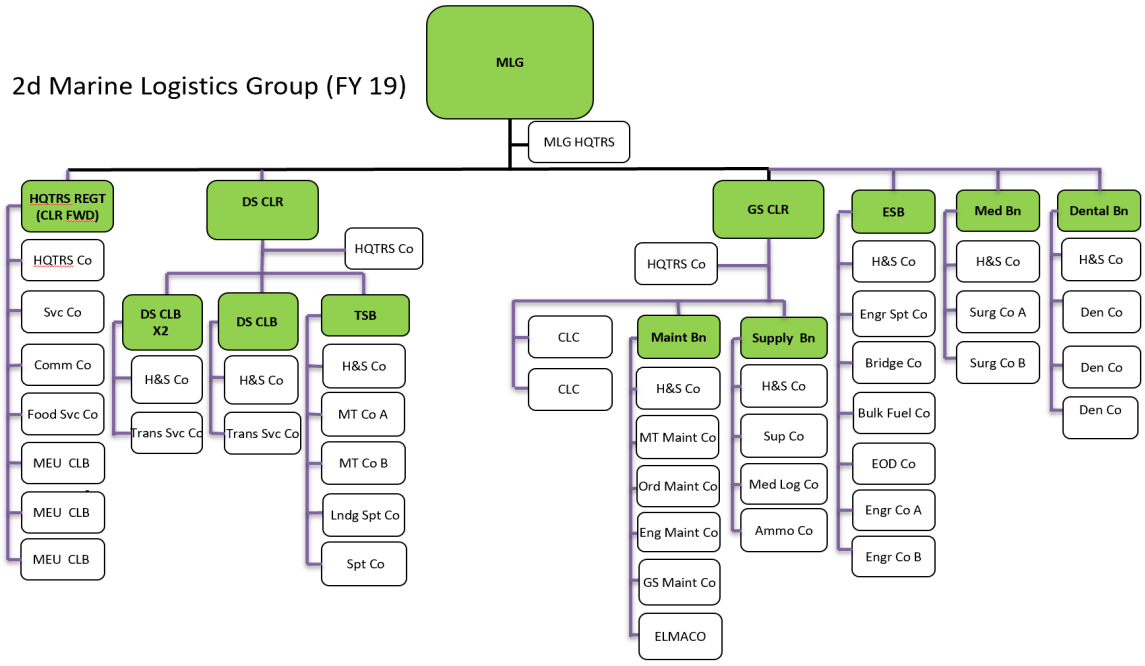

Figure 4. Fiscal Year 19 Marine Logistics Group. Created by author from the Marine Corps Total Force Structure Management System (TFSMS).

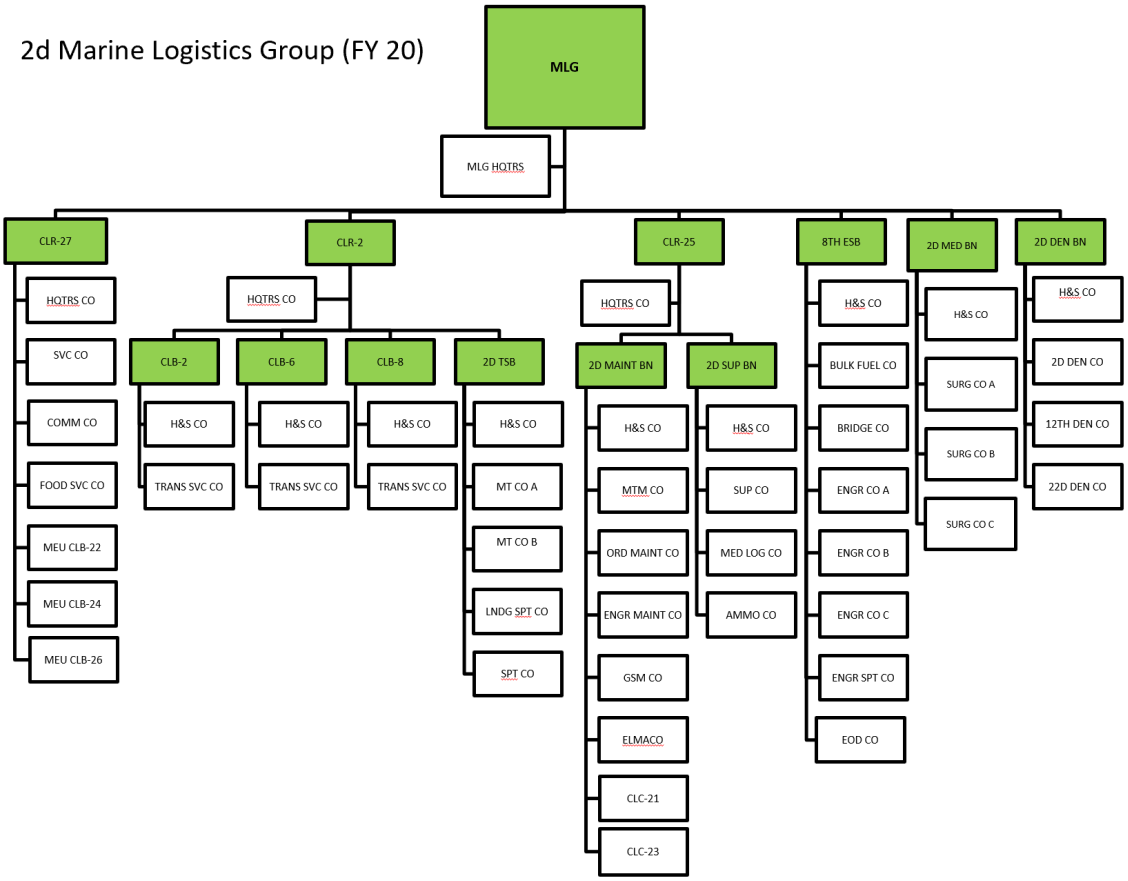

Figure 5. Fiscal Year 20 Marine Logistics Group. Created by author from the Marine Corps Total Force Structure Management System (TFSMS).

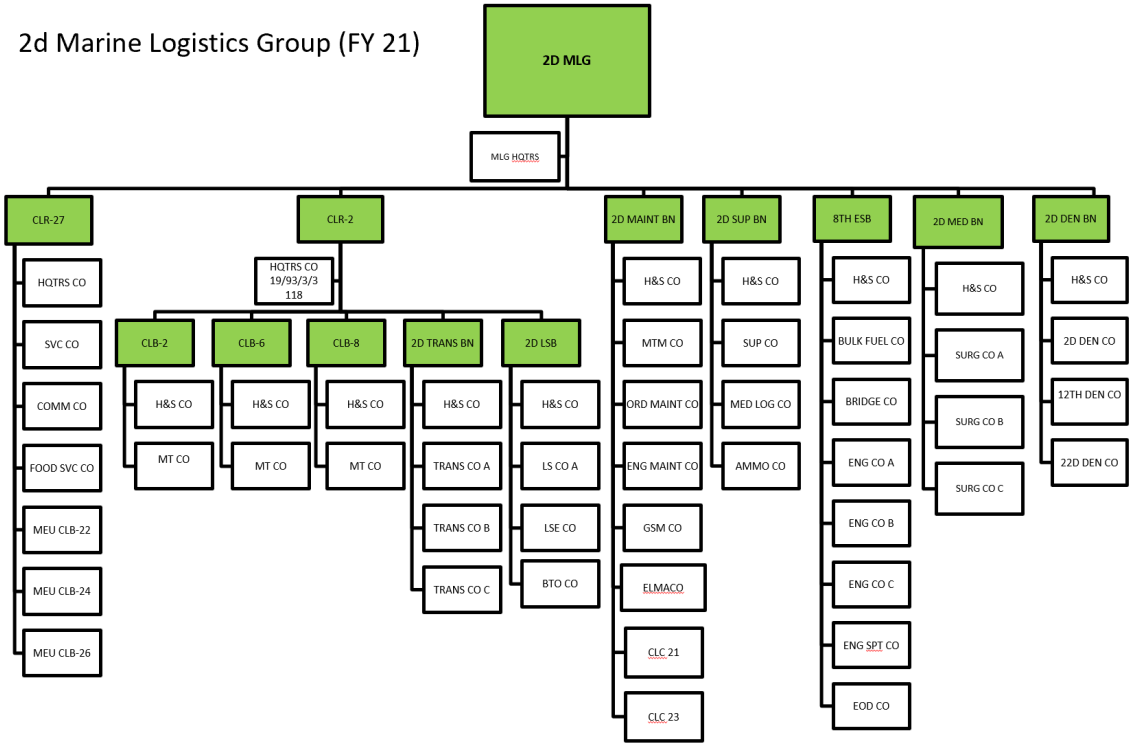

Figure 6. Fiscal Year 21 Marine Logistics Group. Created by author from the Marine Corps Total Force Structure Management System (TFSMS).

The highlighted changes above create capacity for the MLG and appear to provide the MLG commander with the greatest flexibility to create tailored-made logistics units whenever the requirement arises. However, upon further examination, it becomes clear the changes made to support the future fight are near-mirror imaging of the FSSG from the 1990s and Desert Storm. The buildup of combat power for Desert Storm disproved this construct as well as the failures in support in Iraq. Had this been the optimized force structure, the constantly changing commands would have been more concrete. There was time to train and correct the force structure during Desert Storm while there was not in Iraq, and the FSSG changed to become the MLG.

The future fight will likely spring upon the United States with little time to react. Berger's vision to maintain a persistent presence throughout various regions in the world requires teams that train, deploy, and are prepared for a distributed environment. Greater flexibility for the MLG equals less maneuverability for MLRs. The ability to extend the fight in an A2/AD environment will be largely determined by the responsiveness of the supporting units. The

following chapter is a different approach to how the Marine Corps fights and wins in the future, by focusing on force design and training.

Recommendations for Supporting the Future Fight

The following chapter provides recommendations for how logistics forces and capabilities could align within the MEF, specifically in the LCE and GCE, to increase lethality and operational reach in a distributed environment. These recommendations include changes to organization (force design), personnel within logistics and maneuver organizations, and training (individual and collective training standards). The recommendation for organizational changes provides an optimized force for operating inside of the contact and blunt layer in the Pacific and elsewhere. The recommendation for training focuses on enlisted logistics (04XX) military occupational specialties (MOS), the expansion of incidental operators for tactical vehicles, and refinements to enlisted motor transportation (35XX) MOSs.[34] Lastly, the Marine Corps can leverage these recommendations to potentially increase lethality in a contested environment by providing agile and versatile logistics personnel to fill the units that will support the force.

With innovations in technology, the current operating model and the future vision, the Corps must also address modernizing the individual Marine operating within the new force design. This includes modernizing how personnel train, especially enlisted logistics Marines, whose training and education is largely unchanged since the early 2000s. Additionally, force design changes in logistics organizations must incorporate how certain MOSs are utilized within those units. The Marine Corps logistics MOS 04XX enlisted fields require a redesign to provide versatile logistics Marines to the FMF as well as an expansion of incidental operators for tactical vehicles. A more versatile logistics-trained Marine provides greater competency, maturity, and

[34] For the remainder of this treatise, MOSs that began with "04" are always referring to enlisted logistics jobs. MOSs that begins with "35" refer to motor transportation jobs. The "XX" refers to all MOSs within that operational field. The in-depth analysis for changes to personnel in logistics and maneuver organizations and formal training is in Annex A.

utility because the FMF requires a multipurpose individual capable of operating a vast number of systems. This becomes more evident when overlaid in a distributed environment with Marine forces operating in an A2/AD area of operations.

The following changes increase individual lethality in the logistics community by streamlining training and MOS structures. In turn, this creates a more lethal MLG and DS CLB collectively. For logistics forces, lethality and lethalness directly correlate to how well they enable combat arms units. The recommended changes provide a responsive support force to enable the future fight capabilities in the LCE and GCE. Thinking back to the single pallet of critical supplies for the Marine engaged in the fight, versatile logistics Marines that comprise adaptable logistics units will be able to manage emergent systems while providing support rapidly and readily to fellow Marines in the future fight. However, there are a few systemic issues in unit structure and individual training that must be addressed within the enlisted logistics community.

Currently, there are more billets for 0491s—Gunnery Sergeant (GySgt) through Master Gunnery Sergeant (MGySgt)—than there are MOS 0491 Marines to fill those billets. A 0491s is a logistics/mobility chief who coordinates, plans, conducts, and supervises logistics, embarkation, and landing support operations at all levels of war.[35] There are primarily two MOSs—0431 and 0481—that feed into the 0491 MOS once the Marine is promoted to E7/GySgt. A 0431 is an embarkation specialist that prepares supplies, equipment, and personnel for embarkation via all modes of transportation, both military and civilian.[36] A 0481 is a landing support specialist that performs various duties to support the establishment and control of throughput systems on

[35] US Department of the Navy (DON), US Marine Corps (USMC), Marine Corps Order 1200_17D, Part 3, *Military Occupational Specialties Manual (MOS Manual)* (Washington, DC: Headquarters**,** US Marine Corps**,** June 25, 2012), 3–62, accessed November 30, 2020, https://www.marines.mil/Portals/1/Publications/MCO%201200_17D%20PT%203.pdf.

[36] Ibid., 3–58.

beaches, landing zones, ports (air and sea), and terminals for rail, truck, container movement in support of MAGTF operations.[37]

Billet discrepancies and mismanagement from manpower and reserve affairs result in early promotions for MOS 0431/81 to Sergeant (Sgt), Staff Sergeant (SSgt), and Gunnery Sergeant (GySgt). The rapid promotions in logistics MOSs creates an environment for personnel that lack experience to fill billets of greater complexity. Per the Total Force Structure Management System (TFSMS), there are 257 MOS 0491 billets for fiscal year (FY) 20 and FY 21.[38] The combined total number of SSgt 0431s and 0481s is 251 billets.[39] Unfortunately, this difference illustrates major issues in manpower management for enlisted logistics Marines, resulting in the rapid promotion of inexperienced Marines. The result is an inexperienced Marine with antiquated training placed in a scenario in which it is difficult for them to succeed. Commanders across the FMF have lost confidence in logistics Marines, which is the reason nearly one third of MOS 0491 billets are manned by non-logistics Marines. The logistics Marines that not serving in the assigned billeted position often fill ancillary duties such as barracks or facilities manager. These issues inhibit logistics units in the future from maximizing their potential and providing the type of responsive support required for a distributed force to fight and win.

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[37] DON, USMC, *MOS Manual*, 3–61.

[38] "Marine Corps Systems Command," Total Force Structure Management System, last modified November 4, 2020, accessed November 30, 2020, https://tfsms-cognos.mceits.usmc.mil/crn/bi/?perspective=classicviewer&id=i1800BC2EC45A430180E22E16EA304DE9&isViewer=false&isNewFromModule=false&isNewFromPackage=false&isNewDataSetFromModule=false&isNewDataSetFromPackage=false&isTemplate=false&isDataset=false&UIProfile=Titan&cmProperties%5Bid%5D=i1800BC2EC45A430180E22E16EA304DE9&cmProperties%5BdefaultName%5D=Published+-+MOSRollupLevel1&cmProperties%5Btype%5D=report&cmProperties%5Bpermissions%5D%5B%5D=execute&cmProperties%5Bpermissions%5D%5B%5D=read&cmProperties%5Bpermissions%5D%5B%5D=traverse&rsFinalRunOptions%5Bformat%5D=HTML&rsFinalRunOptions%5Ba11y%5D=false&rsFinalRunOptions%5Bbidi%5D=false&rsFinalRunOptions%5BrunInAdvancedViewer%5D=false&rsFinalRunOptions%5BDownload%5D=false&rsFinalRunOptions%5Bprompt%5D=true&rsFinalRunOptions%5BisApplication%5D=false.

[39] Ibid.

The Marine Corps Logistics Operations Group (MCLOG) convened an Operations Advisor Group (OAG) for logistics training and education in September 2019. Colonel Kevin Collins, the commanding officer of MCLOG, posed the question, "How can we shape the institution's training continuum and population to result in a more highly trained and competent logistics chief?"[40] The question posed to the OAG missed a key component and should have been phrased, "how can we provide the FMF with a more versatile and capable logistics Marine and unit that supports the future force design?" As the OAG attendees worked to frame the problem to shape and train a more competent logistics chief, they also identified an inconsequential issue claiming it was a significant one. Special Duty Assignments (SDA) were seen as a detriment to MOS proficiency. SDAs are special assignments such as recruiting, Marine security guard, or drill instructor. The insignificant issue raised regarding SDAs is important to illustrate here because it displays the groups' inability to recognize the real issue of training and education. Highlighting SDAs was an excuse and a misguided reason for failures by young logistics Marines. Additionally, the group identified a need to adjust the MOS 0491 training continuum, that logistics chief training needs to begin earlier in a logistics Marines' career, and lastly, the MOS roadmaps (0431, 0481, 0491) contained gaps in the training continuum.[41] The group found the solution to the SDA issue by adjusting the training continuum but failed to realize that solution and missed an opportunity to fix the issues with SDAs and logistics Marine competency.

The MCLOG OAG in September 2019 addressed the same issues within the 04XX logistics community previously illustrated in March 2017. The result of the 2017 OAG reestablished an advance-level course for MOS 0491s known as the Logistics Chiefs Course (LCC). However, the training for the course focused on battalion and regiment operations from

[40] Kevin Collins, *2019 Logistics Training & Education OAG Out brief* (Marine Corps Air Ground Combat Center/Marine Air Ground Task Force Training Center, Twentynine Palms, CA, 20 September 2019), Slide 4.

[41] Ibid., Slide 4.

under the auspices of supporting Forward Operating Bases (FOBs) or traditional ship-to-shore amphibious operations. In essence, the course and how Marines are trained to operate are based on the previous operating model, not the current operating model for the future fight.

HQMC directed the reinstitution of LCC to cure the performance-related issues that stemmed from a lack of formal training and education in junior enlisted logistics Marines. However, the current construct of the course does not correct the issues due to rank, MOS restrictions, and dated lesson plans. Additionally, the antiquated course does not adequately train or educate Marines on how to provide logistics in a potential near-peer fight in a distributed operating environment. This includes how Marines can cognitively connect the complexities of a distributed environment with existing capabilities and technologies to provide support in the future. To train to a future concept, the formal learning center must simulate the planning or mimic the operating environment as much as possible; for example, creating a scenario that necessitates distributed support requirements across multiple training areas, bases, and stations. Courses that focus on the forward operating base concept employed in Iraq and Afghanistan prevent the logistics community from providing the type of cognitively-agile Marines required to support the anticipated future fight. Lastly, the Marine Corps wastes needed force structure with an MOS 0481. The primary responsibilities of an MOS 0481 are considered collateral duties for other branches of service, and all the core competencies can be distributed between MOS 0431/51.

To solve some of the challenges outlined above, the logistics community within the Marine Corps requires an adjustment to the current model for manning units with competent logistics Marines. A remedy for issues plaguing the MOS 0491 community is provided in detail in Annex A. Lastly, opening the 0491 MOS to other non-logistics Marines required to perform the tasks of a logistics chief will ease some of the burdens for the MOS 0491 to fill across the FMF.

To curb the trend of MOS 0491 GySgt–MGySgt reassignments plaguing the community, the LCC must immediately remove rank and non-logistics MOS restrictions for registration to the course. The LCC must be available to the MOSs listed above and the rank of SSgt. Based on current instructor availability and infrastructure at Logistics Operations School (LOS) in Camp Johnson, North Carolina, the institution could add one additional iteration per fiscal year, coupled with filling courses to the classroom capacity of forty seats. The current requisites for the course—MOS 0431 or MOS 0481 GySgt (select) or MOS 0491 GySgt—are too narrow in scope. The course must be open for enrollment to other MOSs that fill the billet of a logistics chief at all levels of command, and the course must widen the MOS pool to any Marine SSgt and above filling logistics chiefs' billet.

The Marine Corps Training Information Management System (MCTIMS) provides the registration and completion information for all courses aligned to formal learning centers internal to the Marine Corps. After reviewing the enrollment and completion data in MCTIMS, the LCC canceled one of three iterations of the school in FY18, FY19, and FY20. In FY20, the two course iterations that occurred only filled 45 and 47 percent, respectively. Of the student population that attended both iterations, 20 percent were instructors from LOS and were not Marines from the FMF. Commanders must support Marines receiving training and education when assigned to billets as demanding as logistics chiefs, especially when the billet is outside of the formal training and education of a non-logistics MOS Marine.

The Marine Corps must make enrollment in the LCC a requirement within the first ninety days of Marines receiving an appointment letter assigning them to the billet of logistics chief. Making the proof of appointment or completion of the course an inspectable item within the Commanding General's Readiness Inspection Program (CGRI) forces compliance by commands and ensures Marines are educated and better prepared to service in those billets The solutions to open the course to more Marines of diverse MOSs, widening the rank requirement, and forcing commanders to train their Marines through accountability will have an immediate positive impact

on units' logistics sections. Additionally, the mentorship, training, and guidance provided from a more senior and experienced enlisted Marine leader are not quantifiable, but rather intrinsic. This is evident in infantry battalions where the primary logistics officer is often a junior officer who is a first lieutenant or newly promoted captain. The logistics officer relies heavily on the counsel and opinion of the logistics chief. Lastly, opening the LCC to any Marine serving in a logistics chief's billet increases the likelihood of success for that unit, because there is a more senior, diversely trained, and experienced Marine serving in that billet.

There are a total of ninety-eight SSgt MOS 0481 and 153 SSgt MOS 0431 in the Marine Corps. The required number of GySgts MOS 0491 is 257 with 251 Marines available to fill to those billets. Currently, there are eighty-seven non-04XX logistics MOSs filling 04XX logistics billets. Many of the logistics billets filled by non-logistics Marines are in infantry and logistics battalions that support the infantry. Infantry and logistics battalions are the exact units where competent, versatile, and well-trained logistics Marines should serve. The Marine Corps must address the issues with individual MOSs in the logistics community as well as the force design of logistics capability in the MEF. Addressing one without the other does not enable the type of versatile logistics support required for the distributed fight. This addresses the initial question of this treatise, which is whether the changes to the MLG provide the MEF with the type of units optimized for the fight envisioned by the CMC. The answer is no.

Sub-Topic: Unit Organization

With the CMC focusing the Marine Corps on the Indo-Pacific AOR, the following recommendations are predicated on Berger's guidance. A more capable logistics battalion assigned in DS to an infantry regiment provides greater maneuverability while having a logistics force capable of tying into the conceptual design EABO. Establishing DS CLBs assigned to infantry regiments who become the MLR in the future force design provides responsive logistics to the warfighter. The current organizational structure of the MLG creates needless complication

for support, which negatively impacts operational reach. As illustrated in the beginning of this treatise, those Marines awaiting support in the future will continue waiting due to the convoluted process created by the current operating model for the MLG. To streamline the organizational structure of the MLG, three regiments are required to enable greater command and control of functionally aligned battalions. See figure 7 for the proposed changes to the MLG.

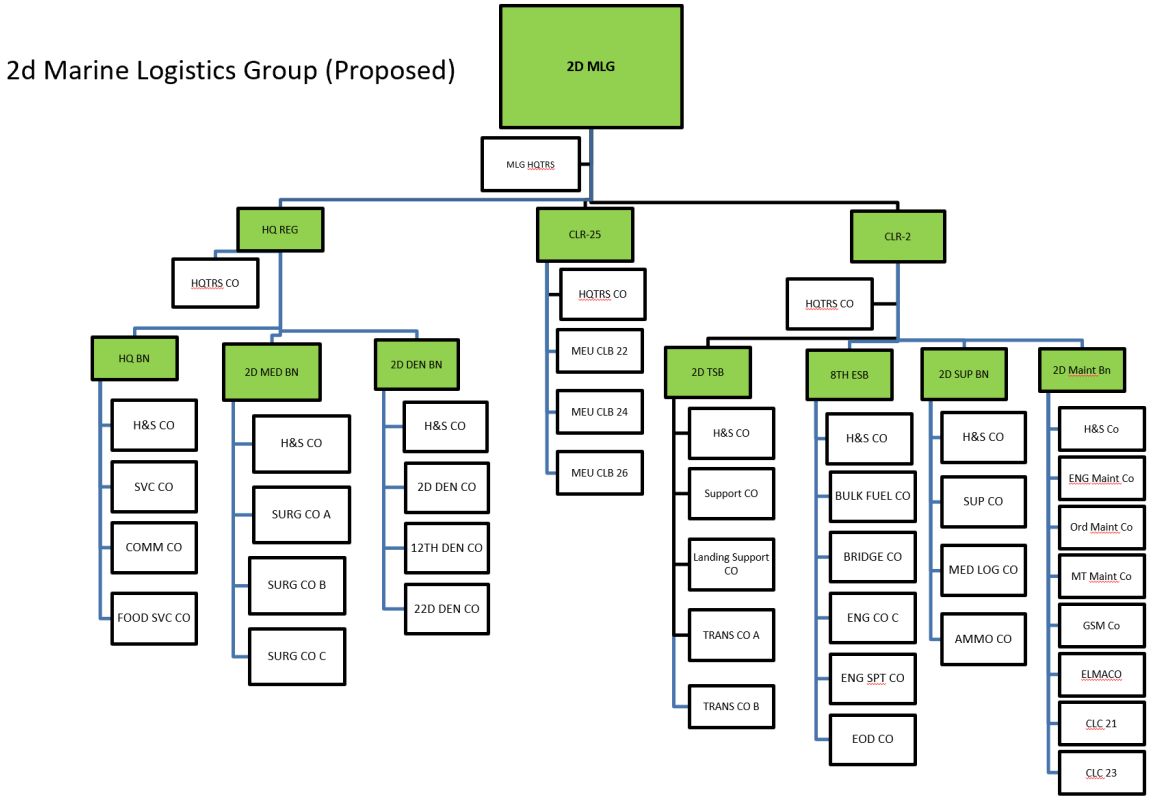

Figure 7. Future Force Proposal of the MLG. Created by the author.

By realigning the MLG, all battalions are assigned to a regiment, which provides greater command and control with clear command relationships. The restructure also increases "lethality in a contested environment including capabilities to enhance close combat lethality in complex terrain" through responsive support and clear lines of communication.[42] The simple illustration of the cumbersome process to request a pallet highlighted in the introduction validates this assertion.

[42] US Secretary of Defense, *2018 National Defense Strategy*, 6.

To fully realize the benefits of the MLG's reorganization, the MEF must also distribute resources within the MLG to DS CLBs by adding limited engineering, maintenance, and landing support capability. While reassigning capability and capacity to the division reduces the overall capacity for the MLG, the change distributes capability and provides greater adaptability and flexibility in logistics planning. Furthermore, there is no additional manpower required for the MEF. The existing manpower will bridge the current capability gap in personnel, which eliminates the requirement for congressional approval for additional force structure or reallocating force structure from already approved total end strength. All capabilities are internal to the MEF and are merely relocated to better support forces in a distributed environment. Reinforcing DS CLBs with greater support capability to the MLR through "resilient and agile logistics" extends the operational reach of an MLR.[43] This is especially true given the likely operational employment of forces in support of EABO. The engineer, maintenance, and landing support resources come from those functional battalions in CLR X. The "X" denotes a single digit CLR such as CLR 1, CLR 2, or CLR 3. Reassigning landing support personnel and equipment from LSB eliminates the requirement for the battalion to exist. The remaining resources not assigned to DS CLBs will form a landing support company within TSB.

The MLG must return engineer personnel and equipment from ESB and recreate engineer support companies within DS CLBs. This closely resembles the previous DS CLB construct. The DS CLB requires material handling equipment for cargo loading and unloading as well as limited fuel and water storage and distribution. Lastly, DS CLBs will be removed from the MLG and reassigned to the corresponding infantry regiment as depicted in figure 8. The green color represents battalion and regiment HQ, and the white color represents the company level with recommended changes.

[43] US Secretary of Defense, *2018 National Defense Strategy*, 7.

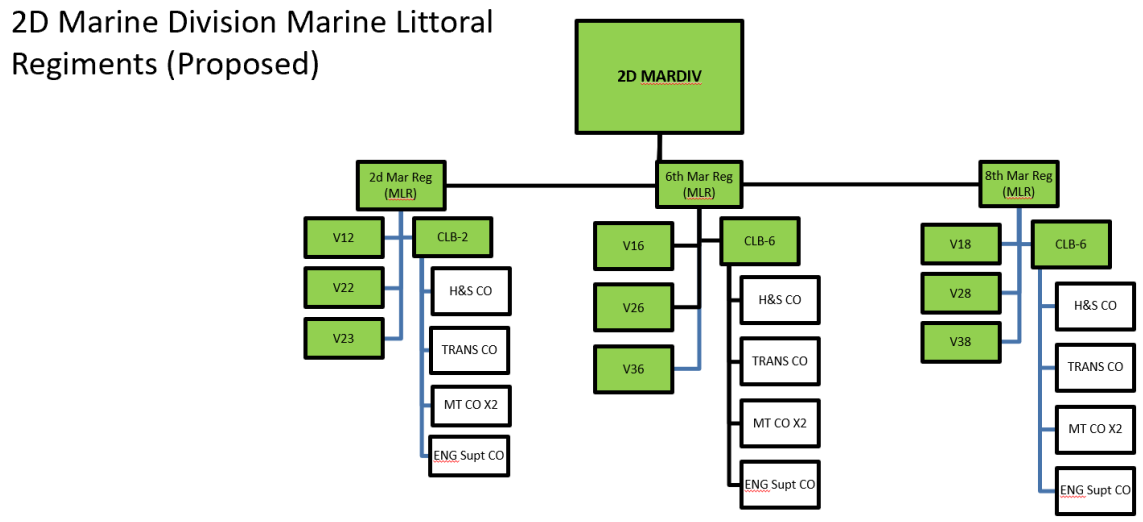

Figure 8. Future Force Proposal of MLRs. Created by the author.

The reinforced DS CLB will be comprised of existing capabilities within the aviation combat element (ACE) and LCE. The change of location from the LCE to the ground combat element (GCE) supports the Commandant's top priority in the CPG of "force design."[44] The DS CLB organizational design assigned to the infantry regiment will consist of two motor transportation companies, an engineer support, maintenance, and H&S companies. Under this design, the DS CLB has the ability and resources to task organize detachments based on the priorities of support from the regiment commander. The command structure increases operational reach and is aligned to the NDS guidance as well as the CPG with the ability to possess greater "lethality in a contested environment" based on the logistics support organic to the regiment.[45] Additionally, the DS CLB is direct liaison authorized with CLR X, which maintains responsive support.

[44] Office of the Commandant of the Marine Corps, *2019 Commandant's Planning Guidance* (Washington, DC: Commandant of the Marine Corps, 2019), 2, accessed September 19, 2019, https://www.hqmc.marines.mil/Portals/142/Docs/%2038th%20Commandant%27s%20Planning%20Guidance_2019.pdf?ver=2019-07-16-200152-700.

[45] US Secretary of Defense, *2018 National Defense Strategy*, 3.

Sub-Topic: Training

As illustrated in the above figures and further defined in Annex A, positioning senior and more competent leadership in key logistics billets ensures experienced personnel assist with planning and executing logistics support at the tactical and operational level. Annex A provides additional, more detailed analysis for enlisted 04XX logistics MOSs, which includes recommendations for structural change to logistics MOSs and updates to the training continuum. From an operational perspective, how the MEF fights and wins in the future stems from the ability of formal schools and learning centers to train and educate Marines.

The MEF must force distributed training and exercise events to stress and evaluate the current operating model. For example, 2d Marines Regiment is the MLR for a training exercise focused on distributed operations. The MEF can facilitate the exercise by securing multiple training locations throughout the east coast. The Regiment HQ could be required to establish a position in Beaufort, South Carolina. The subordinate battalions would have battalion and company objectives in places such as Fort Bragg, Fort Pickett, Fort A.P. Hill, and Marine Corps Base Quantico. By doing so, the MEF would force units to train as they fight in terms of C2 and support relations by not allowing shortcuts with "hook ups" that will always just "make it happen." This requires a disciplined approach to a system-of-systems training evolution that stresses each level of command and how they support higher, adjacent, and subordinate units. Once the MEF completes a realistic exercise that replicates the A2/AD environment with the current construct, they must then attempt the recommendation of this treatise. The complexity of the future operating environment includes the adversary's A2/AD capability, emergent concepts such as EABO, and an area of operations that forces dispersion across the Pacific Ocean. A centrally planned and operated MLG will result in the same ad hoc changes required during Desert Storm and Iraq. The flexibility, adaptability, and responsiveness of future logistics Marines, sections, and units will be predicated on how well trained and educated they are to

emerging threats, and more importantly, how well supporting units can adapt to unforgiving environments with the type of responsiveness required to keep Marines winning in the future.

Conclusion

The Marine Corps' ability to conduct high-end crisis response against the pacing threat is diminished, given the current organization of the MEF. The recommendations provided and detailed in Annex A to MOS structure and training, unit composition, and unit assignment provides the type of agile logistics forces to meet the demands of the future fight. This is even more evident when considering the National Defense Strategy's (NDS) global operating model and the requirement for the Marine Corps to operate within both the contact layer and blunt layer. The A2/AD threat possessed by adversaries creates multiple dilemmas that require agility in planning and execution. As previously explained, the MLG created an inability to sufficiently support the MEF in a distributed environment by the consolidating resources and personnel. This degraded unit cohesion and command relationships between supported and supporting units. The simple, yet powerful example of future Marines requiring only a simple pallet should remain at the forefront of Marine planning. By instituting the changes illustrated in this treatise, the Marine Corps can create a more streamlined and effective support structure for MEFs. Additionally, realigning tactical-level logistics units within the MLG and assigning DS CLBs to infantry regiments will optimize MEF organizations to enable the success envisioned by the CPG and directed by NDS guidance. With this change, the MEF will "build a more lethal force" by having a logistics capability resident within infantry regiments that can support "forward force maneuver and posture resilience."[46] More importantly, the Marine Corps will field units more capable of fighting and winning in the future.

[46] US Secretary of Defense, *2018 National Defense Strategy*, 5–6.

While conducting research for this topic, additional considerations for areas of further study and research became evident. Those considerations are updates to doctrine to reflect the recommended changes, considerations of research and development for unrealized or yet developed Amphibious Logistics Systems equipment, potential exploitation of already existing technologies utilized by civilian logistics enterprises for military use, and how the recommended force structure integrates into the current EABO concepts.

How emergent technologies capabilities—such as long-range precision fires, drone-swarm integration, and additional advances in C2 architects and systems—are supported and integrated into logistics planning and operations is not fully understood or codified. The gap in these areas became obvious while researching and articulating the current operating model: specifically, how these emergent capabilities converge with the anticipated future fight in a contested, distributed, and adversary control environment while planning EABO within an A2/AD threat. This will be the next challenge for planners to contend with at all levels of war. The ability to think through all aspects of warfighting, across the range of military operations within the spectrum of war, will likely define the operational experience for future planners. They will be the ones in real time determining how to support the Marines desperately needing that pallet of supplies while in the fight of their lives.

Annex A: Training and Personnel Within Tactical Level Units

Additional questions and issues surfaced while researching the central question of this monograph. The following detailed analysis into individual billets and sections within infantry and logistics units became imperative. This level of research and analysis further illustrated the requirement for individual logistics MOSs, units, and sections to undergo a complete review to repair the gaps in the current operating model. The focus of this recommendation targets the Marine Corps' logistics community and whether the current model of MOS structure, progression, and training supports the demands of the current and future operating environments and meets the CMC's guidance for future force design.

The proposed changes increase core competencies of logistics Marines while simultaneously reducing gaps in training for personnel filling logistics billets trained in a different MOS. Additional recommendations include eliminating MOS 0481, Landing Support Specialist; expanding core competencies of MOS 0451, Parachute Rigger, and renaming it as Aerial Delivery Specialist; renaming MOS 0491, Combat Service Support Chief to Logistics Chief; and make MOS 0491 a secondary MOS open to other MOS fields filling a logistics chief billet at the rank of E-6 and above.[47]

The following focuses on redesigning the training continuum for MOS 0431 1000 and 2000-level Training and Readiness (T&R) tasks to include former tasks assigned to 0481s that creates a more capable and trained Marine. The tasks include:

1. 1000-level: Support rail operations, conduct beach operations, support arrival airfield control group/departure airfield control group (A/DACG) operations, and support seaport operations.

[47] US Department of the Navy, US Marine Corps, Navy and Marine Corps 3500.27D, *Logistics Training and Readiness Manual* (Washington, DC: Headquarters US Marine Corps, February 12, 2019), 14–2.

2. 2000-level: Transmit cargo/passenger manifest, certify hazardous material for shipment, perform in-transit visibility (ITV) functions, perform combat cargo duties, lead rail operations, plan port operations, plan beach operations, lead A/DACG operations, and execute unit level logistics functions.

3. The updated 0451 task will include the following previously held task by 0481s and coupled with a MOS name change from parachute rigger to aerial delivery specialist:

a. 1000-level: Support Helicopter Support Team (HST) operations

b. 2000-level: Lead HST operations

4. The following non-04XX MOSs include, but are not limited to approval for inclusion of the secondary MOS 0491: 0369, 0431, 0451, 0471, 1169, 1349, 3537, 3529, and 3059,

5. The para-lofts in Camp Lejeune, North Carolina, Camp Pendleton, California, and Camp Butler in Okinawa, Japan, will be equipped with additional facilities to support sling maintenance and simulated HST training.

6. The training aides, training equipment, and training tower must relocate to Fort Lee, Virginia, from Camp Johnson, North Carolina. Fort Lee is the location for 0451s, and training should remain in that location.

The following portion of the detailed analysis provides potential changes for key billets in infantry and logistics battalions. Infantry battalion billets will increase from a SSgt logistics chief to a GySgt logistics chief MOS 0491. The MOS 0491 must have completed the LCC training that is open to additional MOSs that could likely fill the billet of a logistics chief (for example, the senior MOS 3537 Motor Transportation Operations Staff Noncommissioned Officer (SNCO), or MOS 0369 Infantry SNCO). The embarkation chief becomes a SSgt MOS 0431. The current table of organization is illustrated in the Figure 8 below, and the proposed table of organization is shown Figure 9.

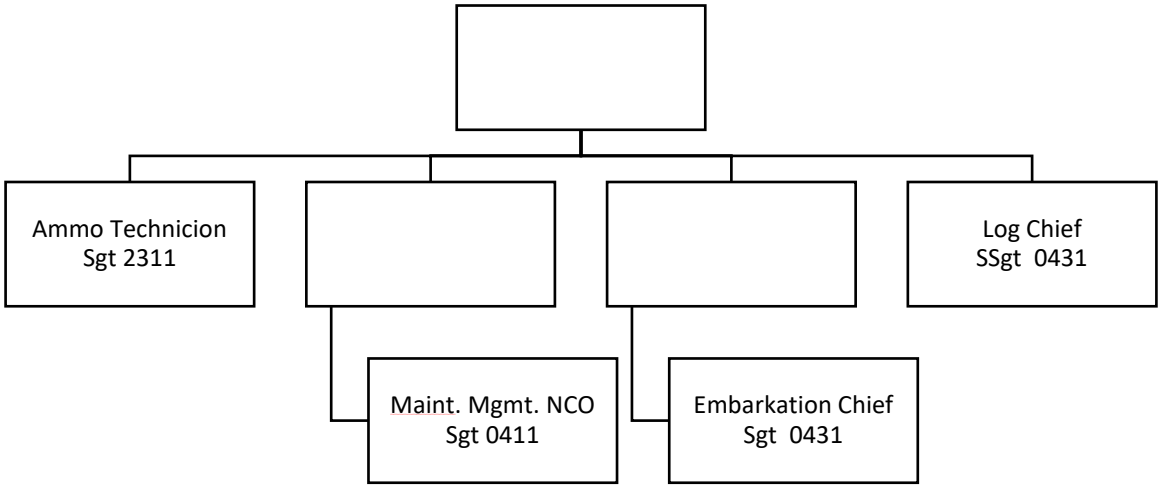

Figure 8. Current Table of Organization for an Infantry Battalion Logistics Section. Created by author.

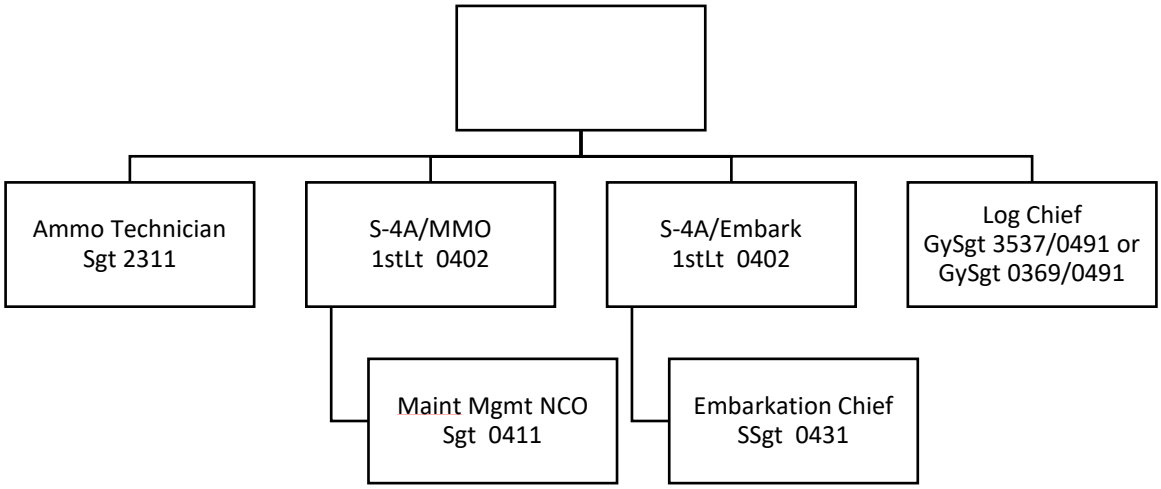

Figure 9. Proposed Table of Organization for an Infantry Battalion Logistics Section. Created by author.

1. MEU CLB S-3s and S-4s will mirror the DS CLB. However, the S-3 will have a SSgt MOS 0431 and SSgt MOS 0451 for embarkation and Aerial Delivery/Landing Support (AD/LS) planning.

2. Marine Air Groups (MAG) will remain a MSgt 0491, but open to MOSs 3537, 0431, or another MOS within the MAG approved to fill the billet of a logistics chief in the S-4.

3. MOS 0491 as a primary MOS becomes a secondary MOS open to additional MOSs not within the logistics MOS fields.

4. MOS 0481 is dissolved and the T&R tasks associated with the MOS have been analyzed, revalidated, and reassigned to MOS 0431 and MOS 0451.

5. MOS 0451 changes the MOS designation from Parachute Rigger to Aerial Delivery Specialist. The 0451 MOS will encompass all aspects of AD/LS. This creates greater versatility at the individual and tactical unit level.

6. Infantry Regiments increase from a GySgt MOS 0491 to a MSgt MOS 0491 in the S-4 section. The MSgt MOS 0491 will come from the logistics or motor transportation community.

7. Direct Support (DS) Combat Logistics Battalions (CLB) will remain a GySgt logistics chief with a logistics or motor transportation background. The logistics chief at a DS CLB is in the logistics section (S-4). The operations chief will be a MSgt with a logistics or motor transportation background with the secondary MOS of 0491 within the operations section (S-3).

8. Transportation Support Battalion (TSB) will have a GySgt 0491 in the S-4 section and a 3537 MGySgt as the operations chief for the battalion. The size and scope of TSB requires greater experience at the battalion level. Approximately 38 percent of all motor transport rolling stock of the Marine Logistics Group (MLG) resides in the battalion (GCSS-MC, 2019).[48]

[48] "Global Combat Support System-Marine Corps," Marine Corps Systems Command, last modified November 4, 2020, accessed November 09, 2020, https://gcssmc-ebs-sakc.usmc.mil/OA_HTML/OA.jsp?OAFunc=APPS SEARCH_DEFAULT_RESULTS&SearchableGroup=SESG_OKC_DOC_SRH_PS&SearchText=&searchGroupDisplayName=All&renderSESUI=N&retainAM=Y&addBreadCrumb=RP&OAMC=K&_ti=1795170293&oapc=23&oas=PaIZVUxotKURkxAQ1PyQAg.

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