



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**MARINE CORPS TRAINING FOR SUCCESS
IN LITTORAL COMBAT: WHAT DOES A SERVICE-LEVEL
TRAINING EXERCISE LOOK LIKE FOR A MARINE
LITTORAL REGIMENT?**

by

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June 2022

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE June 2022		3. REPORT TYPE AND DATES COVERED Master's thesis
4. TITLE AND SUBTITLE MARINE CORPS TRAINING FOR SUCCESS IN LITTORAL COMBAT: WHAT DOES A SERVICE-LEVEL TRAINING EXERCISE LOOK LIKE FOR A MARINE LITTORAL REGIMENT?			5. FUNDING NUMBERS	
6. AUTHOR(S) Martin O. Thomas				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Since 1775 the United States Navy and Marine Corps team has worked together as a naval expeditionary force to project military power to various regions around the globe. The strength of this force has been the cohesion built during training and the preparation conducted in garrison prior to peaceful deployments or into a conflict. The nature of war has not changed over the years; per Commandant of the Marine Corps, the nature of war is, and will continue to be, an escalation to conflict stemming from the opposing wills of two individual nation states or groups. However, the character of war changes as we continue to evolve and make advancements with technology. A key aspect of being competitive and having the ability to adapt, even with changes in the way we wage war, is having a properly organized, adequately equipped, and well-trained force. The latter is the main focus of this research. This research aims to provide an alternative way of training Marine Corps forces that will conduct operations in the United States Indo-Pacific Command area of responsibility. Currently, the Marine Corps spends a significant amount of money annually training in the desert—an environment in which our senior leaders do not expect to fight in the near future.				
14. SUBJECT TERMS training, naval integration, littoral warfare, Naval Expeditionary Operations, Expeditionary Advanced Base Operations, Marine littoral regiment, service level training exercise, military, Marine Corps, Department of Defense, performance, force design, integrated training exercise, Marine Air Ground Task Force, United States Indo-Pacific Command			15. NUMBER OF PAGES 99	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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WHAT DOES A SERVICE-LEVEL TRAINING EXERCISE LOOK LIKE
FOR A MARINE LITTORAL REGIMENT?**

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MASTER OF SCIENCE IN MANAGEMENT

from the

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ABSTRACT

Since 1775 the United States Navy and Marine Corps team has worked together as a naval expeditionary force to project military power to various regions around the globe. The strength of this force has been the cohesion built during training and the preparation conducted in garrison prior to peaceful deployments or into a conflict. The nature of war has not changed over the years; per Commandant of the Marine Corps, the nature of war is, and will continue to be, an escalation to conflict stemming from the opposing wills of two individual nation states or groups. However, the character of war changes as we continue to evolve and make advancements with technology.

A key aspect of being competitive and having the ability to adapt, even with changes in the way we wage war, is having a properly organized, adequately equipped, and well-trained force. The latter is the main focus of this research. This research aims to provide an alternative way of training Marine Corps forces that will conduct operations in the United States Indo-Pacific Command area of responsibility. Currently, the Marine Corps spends a significant amount of money annually training in the desert—an environment in which our senior leaders do not expect to fight in the near future.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PROBLEM	1
B.	SIGNIFICANCE	3
C.	RESEARCH QUESTION	4
1.	Primary Research Question	4
2.	Secondary Research Question	4
D.	METHODOLOGY	4
E.	CHAPTER OUTLINE.....	5
II.	BACKGROUND	7
A.	2018 NATIONAL DEFENSE STRATEGY.....	7
B.	2019 STATEMENT, COMMANDER, U.S. INDO-PACIFIC COMMAND	8
C.	2019 COMMANDANT’S PLANNING GUIDANCE	11
D.	SERVICE LEVEL TRAINING EXERCISE	13
E.	MARINE LITTORAL REGIMENT	20
III.	LITERATURE REVIEW	23
A.	ASPECTS OF EXPEDITIONARY ADVANCED BASE OPERATIONS	24
B.	OPEN OCEAN WARFARE	26
C.	LITTORAL WARFARE.....	26
D.	JUNGLE WARFARE.....	28
E.	CHANGES IN TRAINING BY SISTER SERVICES	30
F.	LEARNING ORGANIZATIONS.....	34
IV.	COST BENEFIT ANALYSIS.....	43
A.	STEP 1: SPECIFY ALTERNATIVES.....	43
B.	STEP 2: BENEFITS (WHO HAS STANDING)	45
C.	STEP 3: IDENTIFY IMPACTS	46
D.	STEP 4: PREDICT IMPACTS OVER TIME	50
E.	STEP 5: MONETIZE IMPACTS.....	51
F.	STEP 6: DISCOUNTED BENEFITS AND COSTS	55
G.	STEP 7: NET BENEFIT PER ALTERNATIVE	60
H.	STEP 8: SENSITIVITY ANALYSIS	63
I.	STEP 9: RECOMMENDATIONS	67
1.	Course of Action #1: The Status Quo.....	67

2.	Course of Action #2: Home Station	68
3.	Course of Action #3: Hybrid	69
V.	CONCLUSION	71
A.	DETERMINATIONS	71
1.	Limitations.....	71
2.	Further Research	72
B.	SUMMARY	73
	LIST OF REFERENCES	77
	INITIAL DISTRIBUTION LIST	81

LIST OF FIGURES

Figure 1.	U.S. INDOPACOM Area of Operations. Source: U.S. INDOPACOM (2021).....	11
Figure 2.	MCGACC Twentynine Palms, CA Terrain. Source: MAGTF/TC/MCGACC Twentynine Palms (2022).....	16
Figure 3.	Refined Mission Essential Task List. Source: Marine Corps Warfighting Lab (2021).	19
Figure 4.	MLR Task Organization Overview. Source: Tentative Manual for EABO, CD&I (2021).	21
Figure 5.	Kahuku Training Area, Hawaii. Source: Patterson (2016).	31

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LIST OF TABLES

Table 1.	Course of Action Summary	44
Table 2.	CBA Assumptions	45
Table 3.	Course of Action #1 “Status Quo” Impacts.	47
Table 4.	Course of Action #2 “Home Station” Impacts.	48
Table 5.	Course of Action # 3 “HYBRID” Impacts.	49
Table 6.	Course of Action Predictions.	51
Table 7.	“Status Quo” Course of Action Impact Monetized.	53
Table 8.	“Home Station” Course of Action Impact Monetized.	54
Table 9.	“HYBRID” Course of Action Impact Monetized.	55
Table 10.	“Status Quo” Course of Action Benefits and Costs Discounted.	57
Table 11.	“Home Station” Course of Action Benefits and Costs Discounted.	58
Table 12.	“Hybrid” Course of Action Benefits and Costs Discounted.	59
Table 13.	“Status Quo” Course of Action Net Present Value.	60
Table 14.	“Home Station” Course of Action Net Present Value.	61
Table 15.	“HYBRID” Course of Action Net Present Value.	62
Table 16.	“Status Quo” Course of Action Sensitivity Analysis.	64
Table 17.	“Home Station” Course of Action Sensitivity Analysis	65
Table 18.	“HYBRID” Course of Action Sensitivity Analysis	66

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LIST OF ACRONYMS AND ABBREVIATIONS

ADFOR	Adversary Force
AOR	Area of Responsibility
ARG-MEU	Amphibious Ready Group—Marine Expeditionary Unit
BLT	Battalion Landing Team
CBA	Cost Benefit Analysis
CENTCOM	United States Central Command
CJCS	Chairman of the Joint Chiefs of Staff
CMC	Commandant of the Marine Corps
COA	Course of Action
DC CD&I	Deputy Commandant Combat Development and Integration
DMO	Distributed Maritime Operations
EABO	Expeditionary Advanced Base Operations
EXFOR	Exercise Force
FARP	Forward Arming and Refueling Point
FM	Field Manual
GWOT	Global War on Terrorism
HA/DR	Humanitarian Assistance and Disaster Relief
ITX	Integrated Training Exercise
JFC	Joint Forces Commander
LAAB	Littoral Anti-Air Battalion
LCT	Littoral Combat Team
LLB	Littoral Logistics Battalion
LOCE	Littoral Operations in a Contested Environment
LRUSV	Long-Range Unmanned Surface Vessel
MAGTF	Marine Air Ground Task Force
MAGTFTC	Marine Air Ground Task Force Training Command
MARDIV	Marine Division
MCAGCC	Marine Corps Air Ground Combat Center
MCDP	Marine Corps Doctrinal Publication
MCTP	Marine Corps Tactical Publication

MET	Mission Essential Task
METL	Mission Essential Task List
MEU	Marine Expeditionary Unit
MLR	Marine Littoral Regiment
MMR	Mixed Methods Research
MOS	Military Occupational Specialty
MTT	Mobile Training Team
MWX	Marine Air Ground Task Force Warfighting Exercise
NPV	Net Present Value
OIE	Operations in the Information Environment
OIF	Operation Iraqi Freedom
OIR	Operation Inherent Resolve
PRC	People's Republic of China
PTP	Pre-deployment Training Program
PV(B)	Present Value of Benefits
PV(C)	Present Value of Costs
SLTE	Service Level Training Exercise
TM EABO	Tentative Manual for Expeditionary Advanced Base Operations
TTECG	Tactical Training Exercise Control Group
TTPS	Tactics Techniques and Procedures
USINDOPACOM	United States Indo-Pacific Command

ACKNOWLEDGMENTS

First and foremost, I would like to thank God for the continued success and blessings that I have received thus far in my Marine Corps career. Second, I would like to thank my family for the continued support that they have shown over the years—during times away from home training and on deployments. Lastly, I would like to thank the many professors at the Department of Defense Management here at Naval Postgraduate School who have all challenged me during my time here.

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I. INTRODUCTION

“Organizations are going to be forced to grow, change, and constantly reinvent themselves in the 21st Century.”

—John Kotter

A. PROBLEM

For the Marine Corps to be competitive in the future operating environment, it must be able to successfully operate in multiple battle space domains. A part of successfully operating in multiple battle space domains requires the organization to evolve the way it approaches training to remain competitive. However, to date the Marine Corps and Navy have made minimal progress in evolving the way they approach training for Marine Littoral units in support of naval operations. Without a concerted effort to evolve training and become a more cohesive naval force, the Navy and Marine Corps team cannot remain competitive in the future strategic environment nor the United States Indo-Pacific (USINDOPACOM) area of responsibility (AOR).

The future strategic environment will require an increased amount of critical thinking by senior leaders to frame, understand, and lead through the wicked problems that may present themselves around the world. Moreover, such wicked problems and the ever-evolving character of war will require a different approach to training. Specifically, to be competitive and adaptable in the USINDOPACOM AOR. Adequately preparing for the future strategic environment requires the Marine Corps to mature as a learning organization (Headquarters United States Marine Corps, 2020a, p. 1-3). Being a learning organization decreases the likelihood of experiencing an issue or problem where there is absolutely zero knowledge of the problem at hand, thus making the Marine Corps a more adaptive and competitive organization (Mullen III, 2019, p. WE21). Becoming more of a learning organization is imperative the for the Marine Corps as it seeks to compete in the future strategic environment.

Traditional approaches to training and education in the Marine Corps have been linear problems with analytical linear approaches to solving problems. Meaning that the scenarios generated for training evolutions were designed to validate existing best practices, policies, and procedures (CMC, 2019, p. 19). Furthermore, education techniques were predominantly focused on regurgitating facts presented in a PowerPoint presentation and/or lecture, and required minimal critical thinking (CMC, 2019, p. 16). An example of this form of training is the Service Level Training Exercise (SLTE) design that was used prior to the inception of the current design, known as the Marine Air-Ground Task Force (MAGTF) Warfighting Exercise (MWX) (Obsidian Solutions Group, 2020, p. 3). Recent changes in policy demonstrated by the top leaders in the Marine Corps show that they are aware of the lesson learned from after-action reviews and the costly lessons learned firsthand in previous conflicts around the globe. These changes include the inception of an Infantry Regiment that is solely focused on Littoral Warfare, the publishing of an organizational document that stresses the importance of being a life-long learner, and an impetus on evolving training and education within the Marine Corps. However, further cultivation of the desire to evolve as an organization requires an openness to change within the Marine Corps.

The design for the current SLTE is a step in the right direction with regards to evolving training to remain competitive in the future strategic environment. Even though the current SLTE design aims to align with the institutional paradigm shift from the industrial age to the information age,¹ there are key aspects of training that are missing for Marine Corps units that are expected to conduct littoral warfare operations as part of a naval expeditionary unit (CMC, 2019, p. 10). The missing piece to the exercise for the Marine Littoral Regiment (MLR) is to conduct training in an environment similar to the environment that will be encountered during a deployment to the USINDOPACOM area of responsibility.

¹ In the 2019 Commandant's Planning Guidance, General David H. Berger stated that, "the Marines Corps must make a fundamental change to the way it approaches training and education" (CMC, 2019, p. 10). This change is referred to a change from the *industrial age model* where the emphasis was on the quantity of Marines trained, to the *information age model* where the emphasis is placed on the quality of Marines trained (CMC, 2019, p. 10).

B. SIGNIFICANCE

Recent changes made by the Marine Corps to prepare for the future strategic environment and a potential conflict in the USINDOPACOM AOR have been mostly administrative. These changes include the restructuring of an Infantry Regiment, prioritizing integration with the Navy, and publishing new doctrine that focuses on Expeditionary Advanced Base Operations (EABO) and Littoral Operations in a Contested Environment (LOCE) (Deputy Commandant for Combat Development and Integration [DC DC&I], 2021b, p. A-1). The previously mentioned changes are an example of *single loop learning* (Argyris, 1977, p. 3). *Single loop learning* can be described as the process of evaluating successes and failures to formulate a plan to achieve desired outcomes in the future. (Argyris, 1977, p. 3). In his article, “Double Loop Learning in Organizations,” Chris Argyris argues that single loop learning is beneficial, however, single loop learning focuses predominantly on the present policies or processes vice assisting in organizational growth: “When the process enables the organization to carry on its present policies or achieve its objectives, the process may be called single loop learning” (Argyris, 1977, p. 3). To remain competitive and develop into a learning organization, the Marine Corps must seek to be an organization where *double loop learning* is present (Argyris, 1977, p. 4). *Double loop learning* can be described as using the policies of the organization as a guideline while also applying reason and a level of professional curiosity (Argyris, 1977, p. 4).

Double loop learning requires members of an organization to take a critical look at the policies, guidelines, and regulations that govern the organization. In doing so, the leaders of an organization may come to the conclusion that the policies, guidelines, and regulations of the organization are antiquated and require changes. While the changes made by the Marine Corps thus far are a step in the right direction, changes to the service level training exercises for the units that are expected to conduct operations in support of EABO and LOCE still require attention. The necessary changes must be made to the current SLTE for a MLR to ensure that the Marine Littoral Regiment is adequately trained and prepared for a conflict in the Pacific. Moreover, these changes must be made to ensure the Marine Corps remains the primary force to conduct amphibious landings as part of a naval expeditionary force.

C. RESEARCH QUESTION

1. Primary Research Question

The primary question to be answered is, “what is the best location to conduct a SLTE for an MLR?” The Marine Corps Air Ground Combat Center (MCAGCC), Marine Air Ground Task Force Training Command (MAGTFTC) in 29 Palms, California provides the ideal training venue because it is in a remote area and the population in the surrounding area is minimal. Though this terrain provides the ideal training venue for live fire training, the terrain is starkly different from the terrain that would be encountered in the U.S. INDOPACOM region.

2. Secondary Research Question

The secondary question to be answered is, what is missing from the current SLTE that would enhance training for an MLR. Since the primary focus of a MLR is to support naval expeditionary operations, should the primary SLTE, MWX, focus on evaluating the knowledge, skills, and procedures required by a MLR in support of naval expeditionary operations.

D. METHODOLOGY

To address each research question, the approach used is a mixed method research analysis to understand the current MWX conducted by MLR units at MCAGCC, in 29 Palms, California. The analysis of the current means of conducting a MWX training exercise to certify MLR units for deployment in support of naval expeditionary operations will identify gaps in training and provide fidelity on the necessary training needed to certify these units along with a suitable location to conduct this training. With a newly formed unit in the MLR, refocus on areas of operation to USINDOPACOM, and a need for more effective naval integration, the current MWX completed as a pre-deployment training requirement does not sufficiently prepare MLR units for a deployment as part of a naval expeditionary unit.

This analysis aims to identify any essential training objectives that are not included in the current SLTE and subsequently the ideal location to conduct an SLTE for a MLR if,

MCAGCC, in 29 Palms, California is not the ideal location. This study is completed by using a mixed methods research (MMR) approach, a mixture of qualitative analysis and quantitative analysis. The quantitative analysis portion of this project is completed by conducting a Cost Benefit Analysis (CBA). The qualitative analysis of this research project consists of providing an analytical review of key topics such as Expeditionary Advanced Base Operations, Open Ocean Warfare, Littoral and Jungle Warfare, and the benefits of being a learning organization. Additionally, a review of changes to training conducting by sister service units that are assigned to the USINDOPACOM region provides a real-world perspective to what a SLTE could look like if conducted in the Hawaiian Islands.

E. CHAPTER OUTLINE

The second chapter of this thesis provides some background on the importance of preparing for operations in the USINDOPACOM region from a strategic perspective, an operational perspective, and a tactical perspective. This is accomplished by reviewing the 2018 National Defense Strategy Summary, a statement made by the former Joint Forces Commander, USINDOPACOM, and the 2019 Commandant's Planning Guidance. Moreover, this chapter provides an overview of the current SLTE and background on the MLR. The third chapter of this thesis reviews sections of the relevant literature in order to provide a greater understanding of how to prepare for naval operations in the USINDOPACOM AOR through research conducted on EABO, Open Ocean Warfare, Littoral Warfare, and Jungle Warfare. Moreover, the third chapter of this thesis helps to provide an understanding of why it is important for the Marine Corps to evolve its training from the perspective of being a learning organization. Lastly, the third chapter provides a review of the United States Army's efforts to evolve its training to better prepare for operations in the USINDOPACOM AOR.

The fourth chapter of this thesis contains the quantitative analysis conducted to support a recommendation of where the ideal location for a MLR SLTE should be. The quantitative method used for analysis is a CBA. This nine-step process assesses viable alternatives, determines the costs and benefits of each alternative, identifies impacts of each course of action, and provides a recommendation based on the value of the impacts

identified. The fifth and final chapter of this thesis provides the findings of all quantitative and qualitative analyses, provides a recommended course of action, and summarizes the overall thesis. This summary includes gaps in research and recommendations for further research to be conducted.

II. BACKGROUND

A strategic shift in the National Defense Strategy and an operational shift in the Marine Corps, prioritizes the United States Indo-Pacific Command region as the top combatant region to focus on. This refocus comes after more than two decades of focusing on the Global War on Terrorism (GWOT), mostly in the United States Central Command (CENTCOM) region. Moreover, a shift to the INDOPACOM region identifies the People's Republic of China (PRC) as a "pacing threat," the primary adversary in the Pacific region, and a top threat to the security of the United States (Secretary of Defense, 2018, p. 2). Under the guidance and direction of the current Commandant of the Marine Corps, General David H. Berger,² the Marine Corps has made a concerted effort to restructure and prepare for the future strategic environment.

To be prepared as the nation expects, there must be a concerted effort made by the Marine Corps to adequately train and prepare for littoral warfare as part of a naval expeditionary force and to be able to conduct Expeditionary Advanced Base Operations in the USINDOPACOM AOR. Moreover, to prepare for operations and conflict in this AOR, the Marine Corps has an obligation to ensure all units that will deploy to this AOR in support of naval expeditionary operations, are conducting training that compliments the tasks that are expected of them, in an environment similar to the environment in which these units are expected to deploy to and operate in (Commandant of the Marine Corps, 1998, p. 30).

A. 2018 NATIONAL DEFENSE STRATEGY

To date, the most current National Defense Strategy is the National Defense Strategy published in 2018. In the 2018 National Defense Strategy Summary,³ the 26th Secretary of Defense, James Mattis, articulated his concerns with regards to the state of our

² General David H. Berger is the 38th Commandant of the Marine Corps, appointed in July of 2019. He is projected to serve in the billet for a total of four years; until 2023 (Marines.mil, 2022).

³ The actual National Defense Strategy is a classified document. However, in 2018 an unclassified open-source National Defense Strategy Summary was released which included the overarching goals and objectives for the Department of Defense (Secretary of Defense, 2018).

military. In short, Secretary Mattis argued that the United States military had lost its competitive edge and needed a shift in strategic focus to regain its competitive edge and to prepare for conflicts in the future operating environment (Secretary of Defense, 2018, p. 1). This was articulated in a statement made by Secretary Mattis regarding the erosion and atrophy of the military: “Today, we are emerging from period of strategic atrophy, aware that our competitive military advantage has been eroding” (Secretary of Defense, 2018, p.1). Secretary Mattis provides three distinct lines of effort in the National Defense Strategy summary of 2018 that would assist in refocusing the Department of Defense. They are as follows, “first, rebuilding military readiness as we build a more lethal Joint Force; second, strengthening alliances as we attract new partners; and third reforming the Department’s business practices for greater performance and affordability” (Secretary of Defense, 2018, p. 5).

Under the first line of effort is a subsequent objective of having *joint lethality* in contested environments (Secretary of Defense, 2018, p. 5). Secretary Mattis articulates this by saying that “the Joint Force must be able to strike diverse targets inside adversary air and missile defense networks to destroy mobile power-projection platforms” (Secretary of Defense, 2018, p. 6). Under the second line of effort there is a subsequent objective of expanding Indo-Pacific alliances and partnerships by having “Mutually beneficial alliances, and partnerships are crucial to our strategy, providing a durable, asymmetric strategic advantage that no competitor or rival can match” (Secretary of Defense, 2018, p. 8). These two objectives along with other objectives outlined in the 2018 National Defense Strategy summary laid the framework for the Commander of the United States Indo-Pacific Command (INDOPACOM) to publish his guidance on how U.S. Forces assigned to INDOPACOM region would contribute to meeting the intent of the National Defense Strategy.

B. 2019 STATEMENT, COMMANDER, U.S. INDO-PACIFIC COMMAND

In his 2019 Testimony before The House Armed Services Committee, Admiral Philip S. Davidson, the U.S. Indo-Pacific Commander expressed his concerns within his area of responsibility. The U.S. Indo-Pacific Command, area of responsibility is illustrated

in Figure 1. These concerns directly aligned with the concerns that the Secretary of Defense outlined in the 2018 National Defense Strategy summary. Moreover, Admiral Philips argued that China poses the biggest threat to the joint vision of a *free and open* Indo-Pacific region. Admiral Philips describes a Free and Open Indo-Pacific region as being “an open Indo-Pacific means we believe all nations should enjoy unfettered access to the seas and airways upon which all nations’ economies depend” (Davidson, 2019, p. 2). He goes into greater detail of describing the characteristics of a free and open Indo-Pacific region by offering that, “when we say free, we mean free both in terms of security-free from coercion by other nations-and in terms of values and political systems. Free to choose trading partners. Free to exercise sovereignty” (Davidson, 2019, p. 2). Admiral Philips proves his point of China being a significant threat to the USINDOPACOM region by outlining China’s renewed focus in the modernization of it’s military. Furthermore, he states that China has grown from a regional to a global power in recent decades and thereby poses a threat to the United States’ National Defense Strategy (Davidson, 2019, p. 8).

A prime example is China’s efforts to expand its influence in the region to the First Island Chain. A key focus in doing this has been the advancements to its Navy. China has invested heavily in establishing an aircraft carrier group and China’s ship building is on pace to exceed the U.S. fleet in 2030 (Davidson, 2019, p. 10). Being that China is at top of the list of adversaries in the region it is important to plan and prepare for an armed conflict with China. The most likely location for a conflict with China in the USINDOPACOM region is the territory known as the ‘First Island Chain,’ as the First Island Chain is the most contested area within the region (Davidson, 2019, p. 5).

Armed conflict or military action is not the primary method of addressing the tension in the region for the U.S. However, all military personnel stationed in or assigned to the region must be “Ready to Fight and Win” (Davidson, 2019, p. 12). This moto is essential to USINDOPACOM’s ability to provide security in the Region. To do so, it is imperative that the Joint Forces Commander has the ability to rapidly build up and maneuver maritime forces from island to island within the region. The rapid positioning of maritime component forces will enable the Joint Forces Commander to gain access to key terrain for follow on operations in the first island chain. The rapid positioning of maritime

component forces supports littoral warfare by providing a means to rapidly deploy forces into the INDOPACOM area of operations.

For the United States and partnered nations to be successful in the INDOPACOM area of operations it is going to take a concerted joint effort to support the Joint Force Commander's focus areas. The INDOPACOM commander has a multitude of forces and assets to carry out the mission of providing a *Free and Open* INDOPACOM region. However, available, and well-trained maritime component forces are essential to the execution joints forms of maneuver such as EABO and LOCE. These two maritime concepts assist in facilitating the execution of one of the three focus areas outlined by Admiral Davidson in the 2019 testimony; this focus area being "Focus Area 2: Enhance Design and Posture" (Davidson, 2019, p. 13). Moreover, the execution of these concepts demonstrates the ability to rapidly buildup combat power and assets in the INDOPACOM region, which is a viable option to serve as a deterrence against Chinese aggression in the region.

Conducting movement and maneuver and sustainment operations are outlined as essential tasks under Focus Area 2: Enhance Design and Posture in Admiral Davidson's Testimony (Davidson, 2019, p. 13). One means that the Joint Force Commander has to conduct movement and maneuver as well as sustainment operations is through Expeditionary Advanced Based Operations with the Navy and Marine Corps team. In the future operating environment where there will be multi-domain operations executed simultaneously; the joint force commander will need flexibility in all domains to not only remain competitive, but to outpace our adversaries such as China. Due to the need to execute operations in the multi-domain environment, the Marine Corp must seek the most effective and efficient ways to train its respective units that will deploy as part of a maritime component force or land component force, in support of EABO, LOCE, or littoral warfare. A failure to train these forces effectively and efficiently will result in the Marine Corps providing the combatant commander with inadequately trained forces, and more importantly, the loss of the U.S. military's most vital resource—the men and women who serve. Furthermore, this will demonstrate an inability on the part of the Marine Corps to adapt to the requirements needed to prepare for the future strategic operating environment.



Figure 1. U.S. INDOPACOM Area of Operations. Source: U.S. INDOPACOM (2021).

C. 2019 COMMANDANT’S PLANNING GUIDANCE

Shortly after assuming his role in July of 2019, the 38th Commandant of the Marine Corps (CMC), General David H. Berger, published his Commandant’s Planning Guidance. In this guidance General Berger highlighted a few points of concern on which he was going to focus his attention during his tenure as the commandant. Restructuring the Marine Corps’ Force Design was on the top of the list of concerns for General Berger: “We should take pride in our force and recent operational successes, but the current force is not organized, trained, or equipped to support the naval force—operating in contested maritime spaces, facilitating sea control, or executing distributed maritime operations” (CMC, 2019, p. 2). One of the immediate actions taken by the commandant to better poise the

organization for conflicts in the future strategic operating environment was the restructuring of the Marine Corps Infantry Battalions. In this restructure the Marine Corps redesignated Third Marine Regiment, Third Marine Division, stationed in Kaneohe Bay, Hawaii as the *Marine Littoral Regiment (MLR)* (DC DC&I, 2021b, p. A-1). The MLR's mission is, "to be able to maneuver and persist inside a contested maritime environment and conduct sea denial operations as part of the naval expeditionary force" (DC DC&I, 2021b, p. A-1).

In addition to force design, the CMC identified two other areas for concern. The other two areas for concern were naval integration and designating the U.S. Indo-Pacific Command (U.S. INDOPACOM) as the main focus-of-effort with regards to areas of operation to study and provide adequately trained troops to be employed by the respective combatant command commander (CMC, 2019, p. 2). Regarding the topic of naval integration, General Berger expressed that there will be new challenges regarding the way naval forces approach naval operations: "The focal point of the future integrated naval force will shift from traditional power projection to meet the new challenges associated with maintaining persistent naval forward presence to enable sea control and denial operations" (CMC, 2019, p. 2). The points of concern outlined in the CMC's planning guidance are directly correlated with the concerns posed by Secretary Mattis in the 2018 National Defense Strategy and by the USINDOPACOM commander in his statement to congress in 2019.

The force design changes, refocus of the Marine Corps to the USINDOPACOM region, and organizational refocus on education have proven to be valuable to the evolution of the Marine Corps as a whole (CMC, 2019, p. 13). A key objective outlined in the Summary of the 2018 National Defense Strategy was education. Education was referenced under *Professional Military Education* and *Talent Management* as a critical part of building a force with creative and talented warfighters (Secretary of Defense, 2018, p. 8). Secretary Mattis articulated the importance of education by saying, "we will emphasize intellectual leadership and military professionalism in the art and science of warfighting, deepening or knowledge of history while embracing new technology and techniques to counter competitors" (Secretary of Defense, 2018, p. 8). The 2019 Commandant's Planning

Guidance seeks to meet the intent of the National Defense Strategy by “changing the Training and Education Continuum from an industrial age model to an information age model” (CMC, 2019, p. 13). Moreover, the restructuring of a Marine Infantry Regiment to provide a force skilled in littoral warfare aims to ensure the U.S INDOPACOM Joint Forces Commander that the Marine Corps is doing its part to prepare for a conflict in that region: “Marines must contribute to the fight alongside our Navy shipmates from the moment we embark. Once ashore, Marine Forces operating within Composite Warfare will increase the Fleet’s lethality and resiliency and will contribute to all domain access, deterrence, sea control, and power projection” (CMC, 2019, p. 10).

However, the current structure for service-level training exercises does not properly prepare the MLR for its role as a persistent force inside of a contested maritime environment, in support of EABO. To summarize the commandant’s planning guidance, the Commandant is leading a service level reform movement to posture the Marine Corps against the Chinese threat. His efforts to transform the Marine Corps into a *threat-based* organization focused on the Pacific include such actions as reducing the total force, divesting tanks, military police, artillery, and entire aviation and infantry units. Additionally, a new unit, the Marine Littoral Regiment, was stood up and adopted maritime doctrinal concepts. The problem is current deficiencies in aligning all efforts is the premier training and validation exercise is in the desert, not at sea. Until the Marine Corps pursues the real-world environment required for realistic training and knowledge transfer, any success at MWX is deceptive or inefficient as a test of proficiency.

D. SERVICE LEVEL TRAINING EXERCISE

In an effort to make the Marine Corps’ SLTE a more realistic training exercise, the 37th Commandant of the Marine Corps, General Robert B. Neller, directed that the design of the exercise change to incorporate *force-on-force* training (Obsidian Solutions Group, 2020, p. 3). Until October of 2019, the primary focus for an evaluated service-level training exercises did not exceed the infantry battalion level and *force-on-force* training did not

exist on a large scale.⁴ In the search for a more realistic training exercise the “MAGTF-TC established the SLTE Operational Planning Team to determine the most effective means for force-on-force integration, while simultaneously addressing the issues highlighted above and in the context of the central problem” (Obsidian Solutions Group, 2020, p. 3).

The exception to this norm of evaluating at the infantry battalion level was the evaluation of the Marine Expeditionary Unit (MEU) prior to deploying as part of an Amphibious Ready Group-Marine Expeditionary Unit (ARG-MEU).⁵ Under the current pre-deployment training program (PTP) model, every infantry battalion is required to conduct a service-level training exercise prior to a scheduled deployment (Headquarters United States Marine Corps, 2019, p. 3-1). Prior to 2019, service level training exercises occurred three times a year (Obsidian Solutions Group, 2020, p. 3). However, with the inception of the MWX in 2019, these exercises were reduced to two times a year and are conducted as force-on-force exercises vice asymmetrical exercises against a fictitious enemy (Obsidian Solutions Group, 2020, p. 3).

There are instances and circumstances where exceptions are made in times of crisis or immediate response to a situation around the globe. One such instance is an unscheduled deployment of an infantry battalion, serving as the Battalion Landing Team for MEU deploying prior to a scheduled deployment in support of a humanitarian assistance/disaster relief (HA/DR) mission (Headquarters United States Marine Corps, 2019, p. 3-1). However, these instances are rare. Prior to deployment, each ARG-MEU conducts naval training together and is evaluated in naval expeditionary operations by both Navy and Marine Corps evaluators (Headquarters United States Marine Corps, 2019, p. 3-1).

⁴ The Operation Iraqi Freedom (OIF) and Operation Inherent Resolve (OIR) deployment model was centered around Marine Infantry Battalions deploying to support a Regimental Combat Team (RCT). An RCT is commanded by a Colonel (O6) (Commanding General, Marine Corps Combat Development Command, 1998). The battalions forward deployed under an RCT often came from different “garrison” infantry regiments.

⁵ A MEU is a Marine Air-Ground Task Force (MAGTF) also commanded by a Colonel (O6) (Commandant of the Marine Corps, 2011, p. 2-12). The main difference between a RCT and a MEU, is that a MEU has organic aviation assets.

Prior to deployment, Marine Corps infantry battalions currently complete a SLTE at the Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center (MCAGCC), in 29 Palms, California. MCAGCC provides the ideal training venue because it is in a remote area, the population in the surrounding area is minimal (Obsidian Solutions Group, 2020, p. 3). Moreover, the location of MCAGCC and the total amount of training area available provides Marine Corps units with one of the best venues for live and non-live fire combined arms training. There are no other bases or training area owned by the Marine Corps that can facilitate the integration of small arms, rockets, artillery, aviation ordnance, and explosives like MCGACC. The base itself covers a total area of 596,288 acres (931.7 square miles) (MAGTFTC/MCGACC Twentynine Palms, 2022). Due to its location in the high desert region of the Mojave Desert, the terrain at MCGACC replicates some of the terrain that Marine Corps units encountered during deployments to the Middle East Region of the World (MAGTFTC/MCGACC Twentynine Palms, 2022).

However, the ability to train in the terrain that a unit was expected to encounter provides a number of benefits that are difficult to measure via a quantitative metric. Though MCGACC provides the ideal training venue for live fire training, the terrain is a stark difference from the terrain that would be encountered in the U.S. INDOPACOM region. The terrain at MCAGCC is predominantly barren desert terrain with steeply sloped mountains and flat intervening valley. Figure 2 provides an illustration of the type of terrain that Marine units encounter and operate in during a SLTE conducted at MCGACC. The elevation at MCAGCC ranges from 1,800 to 4,500 feet above sea level (MAGTFTC/MCGACC Twentynine Palms, 2022). These factors enable Marine Corps Ground and Aviation units to conduct fire and maneuver utilizing practically all munitions that the Marine Corps has in its inventory (Tweedy, M., 2021).



Figure 2. MCGACC Twentynine Palms, CA Terrain. Source: MAGTFTC/
MCGACC Twentynine Palms (2022)

The SLTE is conducted through and evaluated by the Tactical Exercise Control Group's (TTECG) Integrated Training Exercise (ITX) (Dietz, 2013). TTECG serves as MAGTFTC's primary training exercise control group. The evaluators of TTECG, who are referred to as *Coyotes*, are assigned to evaluate units based off of their primary military occupational specialty (MOS) (Dietz, 2013). For example, a Marine whose primary MOS is in the communications field would be assigned as an evaluator who would evaluate a unit's communications TTPs and effectiveness during an exercise. Prior to evaluating a unit conducting an SLTE, the evaluators are required to be observed and evaluated themselves on current MOS doctrine and TTPs (Dietz, 2013). Upon successful completion of this evaluation phase, the Coyotes of TTECG are able to participate in the evaluation of SLTE units (Dietz, 2013). In this capacity they orchestrate the execution of force-on-force MWXs with anywhere from 4,000 to 10,000 participants and millions of dollars' worth of gear, equipment, and ammunition (Obsidian Solutions Group, 2020, p. 3).

Prior to the start of the exercise the opposing forces, which are traditionally the size of an Infantry Regiment, are separated into the exercise force (EXFOR) and the adversary force (ADFOR) (Obsidian Solutions Group, 2020, p. 3). Each unit is equipped with sensors that are worn by the individual Marines to simulate casualties and effects suffered from the munitions used by the opposing force. The design for the SLTE currently conducted at MCAGCC focuses largely on the command and control of multiple units of movement, maneuvering forces through austere environments, casualty triage/care, electromagnetic warfare, information processing, the integration of combined arms such as artillery indirect fires, and close air support through a force-on-force exercise (Obsidian Solutions Group, 2020, p. 3).

Of note, MWX punishes unit's incapable of deception, masking signatures, and decision-making in a communication-denied environment (USMC, 2020). During these force-on-force exercises, commanders are given a significant amount of latitude in decision making (Obsidian Solutions Group, 2020, p. 3). Demonstrating the ability to successfully navigate the aforementioned evaluated areas are critical for the success of an infantry battalion during deployment. In a summary of MWX 2-20, Major General R. B. Turner, Commanding General of MAGTFTC, gave his assessment of the transition to the MWX model for a SLTE. The following is what he offered:

Rife with uncertainty, fluidity, and friction, commanders at all levels were challenged in a competitive environment that amplified the risks, dangers and human implications not normally achieved in scripted training events....This high fidelity and interactive environment enabled learning, adaptation, and flexibility, and demonstrated the character of an organization oriented towards opportunism in future complexity. (USMC, 2020)

There is no question that the MWX model provides effective training for units conducting an SLTE. However, as the Marine Corps aims to refocus on naval expeditionary operations in the Pacific, the aforementioned SLTE does not provide sufficient training to prepare for a future conflict in the Pacific. If in fact the main focus of the Marine Corps is preparation for a conflict against the PRC, in the USINDOPACOM region, then the pre-deployment training should reflect as much. The current SLTE does not incorporate live-fire naval surface fires, nor does it incorporate any ship to shore movements of any forces

that are embarked aboard amphibious vessels. Though these tasks are traditionally reserved for infantry battalions designated as BLTs, being proficient in ship to shore movements and the integration of naval surface fires are essential tasks for units expected to support EABO as part of a naval expeditionary force.

As of 2019 Marine Corps infantry regiments have been conducting a Marine Air-Ground Task Force Warfighting Exercise (MWX) the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center (MAGTF/MCAGCC), in 29 Palms, California; this exercise is said to be akin to an SLTE conducted by an infantry battalion (Obsidian Solutions Group, 2020, p. 3). However, to be a proficient unit and prepared for all missions during scheduled deployments as a part of a naval expeditionary unit, the MLR and all subordinate units must complete a SLTE that adequately prepares the unit to support EABO as part of a naval expeditionary unit. This poses the question of what essential training objectives are not currently included in the MWX conducted at MCAGCC. Another question is whether or not MCAGCC is the ideal location for conducting MLR SLTEs, if naval integration is essential to success in EABO and warfare in contested littorals. Traditionally, when conducting a SLTE or MWX units are evaluated on their ability to demonstrate proficiency in their assigned Mission Essential Tasks (METs). Figure 3 is an illustration of the tentative Mission Essential Task List (METL) for an MLR.

Refined METLs	
Marine Littoral Regiment MCT X.X.X Conduct Expeditionary Advanced Based Operations (EABO) MCT X.X.X Support Maritime Domain Awareness (MDA) MCT X.X.X Support Surface Warfare MCT 3.2.8 Conduct Expeditionary Strike MCT 6.1.1.7.2 Coordinate Air and Missile Defense Actions MCT 5.14.X Support Operations in the Information Environment (OIE)	
Regimental Headquarters MCT X.X.X Plan and Direct Littoral Maneuver MCT X.X.X Command and Control Distributed Naval Expeditionary Forces MCT X.X.X Support Maritime Domain Awareness (MDA) MCT 5.14.9 Plan and Direct Operations in the Information Environment MCT X.X.X Plan and Direct Logistics in a Maritime Environment MCT 5.5.1 Integrate/ Operate w/JIIM MCT 3.2.7.5 Attack Enemy Maritime Targets (TBD Pending further development)	
Littoral Combat Team MCT 1.6.1 Conduct Offensive Operations MCT 1.6.4 Conduct Defensive Operations MCT 1.X.X Conduct Expeditionary Advanced Based Operations (EABO) MCT 2.X.X Conduct Reconnaissance of Key Maritime Terrain MCT 3.2.7.5 Attack Enemy Maritime Targets MCT 1.13 Conduct Irregular Warfare (TBD Pending further development)	
Littoral Anti-Air Battalion MCT 6.1.1.8.X Conduct Short Range Ground Based Air Defense (GBAD) MCT 6.1.1.8.1.X Conduct Medium Range GBAD ISO Expeditionary Bases MCT 1.12.8.X Provide Forward Arming and Refueling Points MCT 5.3.5.X Conduct Air Direction and Air Control in support of Expeditionary Advanced Base Operations MCT 5.3.5.3.2 Conduct Airspace Surveillance	
Combat Logistics Battalion MCT 4.1.2 Conduct Ground Supply Operations MCT 4.2.2 Conduct Ground Equipment Maintenance MCT 4.4 Conduct General Engineering Operations MCT 4.5 Provide Health Services MCT X.X.X Conduct Littoral Transportation Operations MCT 1.12.3 Conduct Prepositioning Operations MCT 6.8 Conduct Explosive Ordnance Disposal Operations MCT 4.13 Conduct Operational Contract Support	

Figure 3. Refined Mission Essential Task List. Source: Marine Corps Warfighting Lab (2021).

The current MWX model and location for training are not fully aligned with the ability to evaluate the METs an MLR. Of thirty-two METs for the MLR, twelve are inarguably maritime based (see Figure 3). The first three METs are “Conduct Expeditionary Advanced Base Operations,” “Support Maritime Domain Awareness,” and “Support Surface Warfare” (see Figure 3). Effectively testing and evaluating these METs in a desert environment is not ideal. Moreover, many of the other performance standards conducted at MWX are not directly aligned with what is expected of a MLR in support of naval expeditionary operations.

In his 2019 Commandant’s Planning Guidance, General Berger stressed the importance of the Marine Corps being a learning organization (CMC, 2019, p. 16). The method of testing plays an important role in the ability of an individual to learn: “Learning focused on adult learning emphasized that testing is a key component to successful results in active learning” (Stolovitch & Keeps, 2011). Keeping this concept in mind the Marine Corps must continue to evolve SLTEs to be prepare for the future strategic environment. The current SLTE design is not testing to the full extent of what is expected of a Marine Littoral Regiment. Therefore, the learning with respects to the intricacies of littoral warfare

is minimal. To be an effective SLTE, MWX must test at the lowest level being the individual Marine, all the way up to the senior commanders and enlisted advisors. Given how much time, effort, and resources are exhausted to assemble the required gear and personnel needed to conduct an MWX, it is essential the Marine Corps maximizes the training opportunity and chance to learn. In the article “Telling Ain’t Training,” the authors claim that “tests should be correlated with performance objectives” (Stolovitch & Keeps, 2011).

Stolovitch and Keeps add that “there is no true way to measure procedural knowledge unless the learner performs for real, via simulation or through a scenario. Talking is not enough” (Stolovitch & Keeps, 2011). Unless and until Marines train in maritime environments the knowledge and skills demanded of them for the future operating environment is unserious and detrimental to readiness: “This challenge goes beyond testing and evaluation; training in a dissimilar environment threatens learning” (Tweedy, 2021). The Marine Corps is not adequately preparing MLR units and leadership for an assigned mission in support of naval expeditionary operations by having Marines imagine that they are at sea when they are in the desert. This mindset breeds a false sense of security in training and does not fall in line with the Commandant’s vision of competing in the U.S. INDOPACOM area of responsibility.

E. MARINE LITTORAL REGIMENT

The MLR concept is considered to be the way of the future for the Marines and warfare conducted in contested and non-contested littoral regions around the world. War has been and will continue to be the result of two opposing wills that cannot be solved by lesser means (Commandant of the Marine Corps, 1997, p. 3). Therefore, the nature of war has not and will not change. However, “technology and the evolution of weapons systems has and will continue to change the way in which we can envision war being conducted” (Commandant of the Marine Corps, 1997, p. 3). Marine Corps Doctrinal Publication 1, *Warfighting* provides a clear distinction between the nature of war and the characteristics of war: “While the nature of war is constant, the characteristics of war continue to evolve as technology becomes more advanced” (Commandant of the Marine Corps, 1997, p. 3). The

advancement of technology has resulted in the adversary being able to gain dominance in many of the recognized battle space domains—air, land, maritime, space, and cyberspace.

The MLR is an experimental force structure concept to validate the ideal force composition and size needed to conduct Expeditionary Advanced Base Operations in the United States Indo-Pacific Command (USINDPACOM) area of operations (DC DC&I, 2021, p. 1-3). Third Marine Littoral Regiment, formerly known as Third Marine Infantry Regiment, located in Kaneohe Bay, Hawaii is the only task organized Marine Littoral Regiment in the Marine Corps. The new littoral regiment structure includes a Regimental Headquarters reinforced with a long-range unmanned surface vessel (LRUSV) platoon, an operations in the information environment (OIE) platoon, and reinforced communications platoon (DC DC&I, 2021b, p. A-1). Where the previous regiment structure possessed three infantry battalions and an artillery battalion, the new structure is comprised of a Littoral Combat Team (LCT), a Littoral Logistics Battalion (LLB), and a Littoral Anti-Air Battalion (LAAB) (DC DC&I, 2021b, p. A-1). Illustrated in Figure 4 is the Marine Littoral Regiment Task Organization Overview.

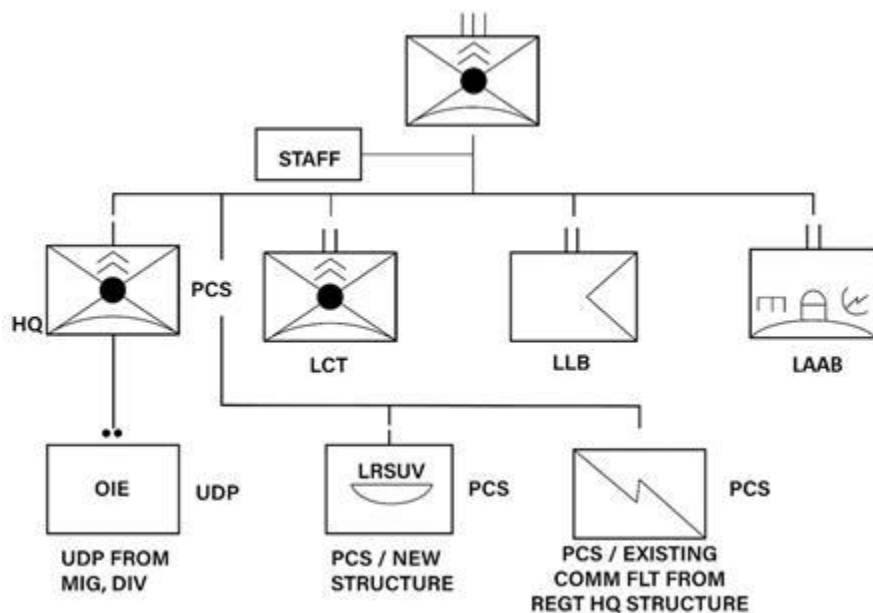


Figure 4. MLR Task Organization Overview. Source: Tentative Manual for EABO, CD&I (2021).

The tentative mission for Third MLR is to, “Maneuver and persist inside a contested maritime environment and conduct sea denial operations as part of the naval expeditionary force in order to enable Fleet operations.” (DC DC&I, 2021b, p. A-1). To successfully achieve this mission, the TM EABO states that the MLR must be able to conduct nine essential tasks. These nine essential tasks are as follows:

1. Conduct surveillance and reconnaissance.
2. Conduct Operations in the Information Environment (OIE).
3. Conduct a screen/guard/cover.
4. Deny or control key maritime terrain.
5. Conduct surface warfare operations.
6. Conduct air and missile defense.
7. Conduct strike operations.
8. Conduct sustainment operations,
9. Conduct forward arming and refueling point (FARP) operations. (DC DC&I, 2021b, p. A-1)

A key factor in a MLR’s ability to complete the mission of persisting and maneuvering in a maritime environment is to conduct training in an environment similar to the perceived area of operations for conflict. Conducting training in an environment similar to the environment in which the MLR is expected to operate will assist in building proficiency in the assigned tasks. Furthermore, this training should be conducted with a naval expeditionary force similar to the one that it is expected to deploy and conduct naval expeditionary operations with. The long-term goal for force design is to have three fully task organized MLRs located in the USPACOM area of operations under Third Marine Infantry Division. Third Marine Infantry Division is one of two Marine Corps Infantry Division under Fleet Marine Forces Pacific and ultimately U.S. INDOPACOM (US INDOPACOM, 2021).

III. LITERATURE REVIEW

The literature reviewed in this chapter was selected and reviewed to provide some relevance to EABO. It provides a more in depth understanding of why it is important for the Marine Corps to be prepared for operations in a multi-domain environment, and it provides insight on the benefits of the Marine Corps maturing as a learning organization. Some of the history surrounding EABO is covered by reviewing the current EABO publications and the historical publications that were previously used by the Navy and Marine Corps. The importance of preparing for the maritime and land domains is explained by reviewing research and publications on open ocean warfare, littoral warfare, and jungle warfare (Vego, 2015 p. 53). Lastly, the maturation of the Marine Corps as a learning organization is explained by reviewing scholarly research on key characteristics of learning organizations.

Knowing and understanding the 21st Century joint battle space domains is essential to understanding how the United States Department of Defense plans to fight and defend against adversaries around the globe. The fundamental physical area in an operational environment assigned in a Joint Force Commander's area of operation encompasses the Air, Land, Maritime, and Space (CJCS, 2017). The evolution and advancement of technology has forced the Department of Defense to re-define what the "operational environment" is. In doing so, the information environment was added as operational domain: "While the information environment encompasses, cyberspace which comprises and aggregates numerous social, cultural, cognitive, technical, and physical attributes that act upon and impact knowledge, understanding, beliefs, world views, and, ultimately, actions of an individual, group, system, community, or organization" (CJCS, 2017). As an institution, the Marine Corps should be able to operate in and support operations in all of the defined battlespace domains. However, the three domains in which the Marine Corps should especially be prepared for are the Air, Land, and Maritime domains.

A. ASPECTS OF EXPEDITIONARY ADVANCED BASE OPERATIONS

In 2019, Expeditionary Advanced Base Operations was agreed on by the Chief of Naval Operations and the Commandant of the Marine Corps as a top priority for both the Navy and the Marines Corps. (DC DC&I, 2021b, p. 1-1). The Chief of Naval Operations and the Commandant of the Marine Corps “approved the *Concept for Expeditionary Advanced Base Operations*, a foundational naval concept that seeks to address challenges created by potential adversary advantages in geographic location, weapons system range, precision and capacity while creating opportunities by improving our own ability to maneuver and exploit control over key maritime terrain” (DC DC&I, 2021b, p. 1-1).

The concept of EABO is not a new concept to the Marine Corps, the Navy, or the Department of Defense. However, more than two decades of fighting in support of the War on Terrorism in the Middle East has redirected the institutional focus on naval operations and Advanced Based Operations. The shift in focus of the Marine Corps to the Pacific region and an increased amount of naval integration is described by General Berger as a necessity (CMC, 2019, p. 2). Moreover, it is described as a means to assist in the training, manning, and equipping of Marine Corps units: “We cannot afford to build multiple forces optimized for a specific competency such as arctic warfare, urban operations, or desert warfare. We will build one force—optimized for naval expeditionary warfare in contested spaces, purpose-built to facilitate sea denial and assured access in support of the fleets” (CMC, 2019, p. 5).

The sense of urgency to research and develop doctrine on operational concepts such as EABO, LOCE, and DMO are key factors in the ability of the Marine Corps to evolve and prepare for the future strategic environment (DC DC&I, 2021a, p. C-1). Revised doctrine and the refocus on EABO aims to reprioritize EABO and naval operations as core capabilities for the Marine Corps. Moreover, the new doctrine and manuals aim to provide an update to the existing manning, equipping, and training for EABO; specifically, the Tentative Manual for Expeditionary Advanced Base Operations (TM EABO) published in February of 2021 (DC DC&I, 2021b, p. 1-1). The Tentative Manual for Expeditionary Advanced Base Operations includes concepts and topics from three preceding publications. The first publication is *Advanced Base Operations in Micronesia*, which was written in

1921 (DC DC&I, 2021b, p. iii). The second publication is a *Tentative Manual for Landing Operations* generated in 1934 by the Marine Corps and used in the creation of the third publication (DC DC&I, 2021b, p. iii). The third publication is a naval product, *Landing Operations Doctrine*, which was a Navy Fleet Training Publication, released in 1938 (DC DC&I, 2021b, p. iii).

The concept of Advanced Base Operations in Micronesia was written in response to Major Earl H. “Pete” Ellis’ analysis of what a perceived war with Japan would look like (Headquarters United States Marine Corps, 1921, pg. i). In this analytical publication was a plan to gain and maintain control of small islands within the Pacific region which could be used to preposition the logistics and forces needed to launch other amphibious assault in route to mainland Japan (Headquarters United States Marine Corps, 1921, pg. i). Approximately twenty years after its inception the Advanced Base Operations in Micronesia concept was used by U.S. forces in the pacific campaign of World War II (DC DC&I, 2021b, p. iii).

The Navy Fleet Training Publication, *Landing Operations Doctrine*, claims that numbers alone do not guarantee success in landing operations, it requires an effective and efficient force to be successful (United States Navy 1938, p. 4). As seen in history, landing operations on uncontested islands are difficult and complex alone. Imagine landing on a contested island at night it would require superior planning and coordination:

There must also be that effectiveness which is obtained by proper organization, equipment, and training of the naval and marine forces involved, not only for the special operation of landing but also for the conduct of the subsequent advance inland from the shoreline where decisions will have to be made and executed under the stress of battle to meet conditions that are more adverse than those ordinarily prevailing in a purely land attack. (United States Navy, 1938, p. 4)

Moreover, the publication claims that the Marine Corps force conducting the landing must be a superior infantry force to be successful (United States Navy, 1938, p. 4). This force should be adequately equipped, manned, and trained in amphibious landing operations to be successful. Without harmony in the three facets, the landing force may well be overwhelmed by the opposing force: “Unless the landing forces are unquestionably

superior in infantry, as well as artillery and other supporting arms, to the enemy forces that may be expected to oppose the landings and the subsequent operations on shore required for the accomplishment of the mission, the initiation of such an operation is not justified” (United States Navy, 1938, p. 5).

B. OPEN OCEAN WARFARE

From the inception of the Continental Navy and the United States Marine Corps in 1775, the primary focus of the Navy and Marine Corps team has been to disrupt any adversary maritime operations that pose a threat to the United States and Allied Nations, to enable unimpeded travel for commercial maritime operations, and to deliver combat ready naval forces (Navy Recruiting Command 2021). An essential part of completing these tasks is the ability to conduct open ocean warfare. Given the vast amount of ocean covering the globe and overall reliance on sea lines of communication by the United States, it is essential for the Navy to be proficient in open ocean warfare. There are historical examples of how naval operations in the maritime domain intervened on adversary actions to support the Nation’s ability to utilize sea lines of communication unimpeded. In the multi domain battlefield that commanders are forced to operate in today, this becomes difficult. Moreover, without success in the maritime domain, specifically open ocean warfare by the Navy, the Marine Corps is unable to gain the tactical advantage and be successful in the land and air domains which is gained in the transition from open ocean warfare to littoral warfare (United States Navy 1938, p. 4).

C. LITTORAL WARFARE

The globe’s littoral areas, the location at which the sea and the land are joined together, are as important to naval expeditionary forces as the open ocean is (United States Navy, 2020, p. 56). Moreover, to be successful as a naval expeditionary force, the Navy and Marine Corps team must be a cohesive and adequately trained naval force; able to plan and successfully complete littoral warfare operations (United States Navy, 2020, p. 56). The sum of the team able to operate as a cohesive unit vastly outweighs any specialized abilities possessed by the individual institutions alone. In his article, *On Littoral Warfare*, Milan Vego claims that there are two fundamental approaches to naval operations in which

U.S. naval forces can categorize naval operations; warfare on the open ocean and warfare conducted in the littorals (Vego, 2015 p. 53).

Milan Vego goes into great detail to make the claim that it is important that differentiate war conducted on the open ocean and war conducted in the littorals around the world. Later in the passage, he describes the employment of “naval forces and aircraft,” it goes without saying but this includes the United States Marine Corps. Moreover, the author discusses the importance of understanding what “Littoral Warfare” is to be able to employ forces properly. Lastly, the author briefly mentions the ability to properly train the respective forces for littoral operations. Moreover, Vego claims that it is extremely important for commanders and planners to know the difference between warfare conducted in the open ocean and warfare conducted in littorals (Vego, 2015 p. 30). He says this because there are distinct factors that categorize each and can affect the decision made to execute operations (Vego, 2015 p. 30). Warfare in the open ocean is largely conducted exclusively by the Navy. However, warfare conducted in the littorals is conducted by the Navy/Marine Corps team with the support of many other agencies and resources: “Littoral warfare requires the closest cooperation among the services, or ‘jointness.’ It also often requires close cooperation with forces of other nations” (Vego, 2015, p. 30).

The ability to navigate through and influence sea lines of communication is imperative to the defense of the nation. By not doing so, the Department of Defense would lose sight on and miss out on ideal areas of operation that can have significant strategic value; especially with the large amount of access to different nations via the ocean: “About 80 percent of all countries border the sea, and approximately 95 percent of the world’s population lives within six hundred miles of the coast” (Vego, 2015, p. 30). Going a step further, access to different countries via the sea increases the ability to influence locations of interest or higher strategic value: “Some 60 percent of the world’s politically significant urban areas are located within sixty miles of the coast, and 70 percent within three hundred miles. About 80 percent of the world’s capitals are in the littorals” (Vego, 2015, p. 31).

These facts strengthen the point that the United States naval force should have an increasing desire to prioritize littoral warfare over warfare in the open ocean. Moreover, there should be a distinct separation between the two in planning and training: “naval

warfare in the littorals has much in common with war conducted on the open ocean. However, there are also some significant differences, due to the extremely complex, dynamic, and challenging physical environment of the former. The peculiarities of the physical environment in the littorals offer many challenges—but also opportunities—in the employment of naval forces and aircraft” (Vego, 2015, p. 30). Identifying the distinctions between open ocean warfare and littoral warfare assists commanders in properly allocating resources: “Distinctions between characteristics of war on the open ocean and in the littorals must be thoroughly understood; otherwise, commanders and their staffs simply cannot plan or employ their forces properly” (Vego, 2015, p. 30). Furthermore, the identification of the distinction between open ocean warfare and littoral warfare: assists in prioritizing training when preparing for naval operations: “Perhaps the most important prerequisite of success in littoral warfare is a solid theory developed ahead of time; otherwise, it is not possible to organize and train forces properly” (Vego, 2015, p. 30). Without adequate training, the Navy and Marine Corps team cannot achieve success in Littoral Warfare.

D. JUNGLE WARFARE

In naval expeditionary operations there comes a point where the shift of main focus goes from the battle in the open ocean and littoral, to the battle that is fought on land (Commandant of the Marine Corps, 1998, p. 30). In this transition the main effort unit becomes the Marine embarked aboard naval vessels. These Marines are most commonly known as the *Landing Force* that will conduct the land-based operations (United States Navy, 1938, p. 5). In the U.S. INDOPACOM region, the terrain in which the landing force will operate in is predominantly comprised of thick vegetated jungle terrain. However, the Marine Corps continues to conduct SLTE’s for units deploying to the INDOPACOM region in desert mountainous terrain, aboard MCAGGC.

The withdrawal of U.S. troops out of Afghanistan marks the end of the Marine Corps’ focus on pre-deployment training to deploy in support of operations in the Middle East (at least for now). However, we continue to train for and base our tactics, techniques, and procedures (TTPs) on the experiences of the Iraq and Afghanistan conflicts. While

these conflicts provided countless lessons learned that resulted in beneficial changes within the Marine Corps. These conflicts have also stiffened the Marine Corps' ability to look past the linear pre-deployment training model focused on armed conflict in the middle east and find new ways to train Marine Corps units that will deploy in support of strategic objectives in the INDOPACOM area of responsibility. In September of 2020 the Marine Corps published Marine Corps Tactical Publication (MCTP) 12-10C: Jungle Operations (Headquarters United States Marine Corps, 2020b, p. i).

MCTP is a joint publication, published by both the Army and the Marine Corps. For the Marine Corps, this publication replaces the previous Jungle Operations publication, Field Manual (FM) 9-05 that was published in May of 2016 (Headquarters United States Marine Corps, 2020b, p. i). The first chapter of this publication outlines the key jungle regions around the world and the importance of preparing for a conflict in each of these regions (Headquarters United States Marine Corps, 2020b, p. 1-1). The author claims that a lack of preparation for environments like those jungle regions outlined in the publication can have severe adverse effects on the individual Marine, the unit, and ultimately the mission: "Jungles are harsh environments, characterized by intense heat, heavy precipitation, and thick vegetation that can adversely impact operations for unprepared forces" (Headquarters United States Marine Corps, 2020b, p. 1-1).

Marine Corps units that conduct SLTEs at MAGTFTC do encounter environmental challenges during the course of the exercise. However, they do not encounter the exact terrain and environments that is described in *Jungle Operations* with regards to the jungle environment that is outlined in the *Jungle Operations* publication. In addition to adverse effects to the individual Marines, the terrain can limit the mobility. Specifically, overgrown, tangled, and impenetrable vegetation can eliminate the use of some vehicle assets (Headquarters United States Marine Corps, 2020, p. 1-1). The terrain at MAGTFTC in 29 Palms, California does not pose this type of problem set for commanders and planners to work through during the current SLTE model.

To enable MLR units to perform all tasks associated with naval expeditionary operations in the USINDOPACOM region, MLR units must train and be evaluated in the environment that they are expected to operate in. In MCTP 12-10C the author claims that

individual Marines and units can achieve success in these environments only if they are prepared: “Through preparation, acclimatization, and preventive measures, Soldiers can overcome challenges and prevail in the dense forests, swamps, and grasslands of the world’s jungles” (Headquarters United States Marine Corps, 2020b, p. 1-1). The jungle is a neutral environment, meaning that the adverse effects that friendly forces experience will also be experienced by adversaries that we face in this environment. However, an adversary that has lived and trained in the jungle environment will be far more prepared for conflict in this environment.

E. CHANGES IN TRAINING BY SISTER SERVICES

The United States Army has recognized the importance of training in the environment in which a future conflict may happen and has demonstrated the ability to train its forces in such an environment. In October of 2021, the Joint Pacific Multinational Training Center located on Oahu, Hawaii, conducted a 14-day, multinational exercise on the Hawaiian Islands of Oahu and Hawaii, *The Big Island* (Cole, 2021). Prior to the October 2021 exercise, the 25th Infantry Division, based out of Schofield Barracks in Hawaii, would send units from Hawaii to the Southeastern area of the United States to conduct certification training: “Schofield Barracks, until now, would send about 5,000 soldiers annually to Fort Polk La., for culminating training to certify an infantry brigade’s combat readiness for war” (Cole, 2021).

This scenario is comparable to what the Marine Corps does by sending the Third Marine Littoral Regiment, based out of Kaneohe Bay, Hawaii, to Twenty-nine Palms, California to conduct the MWX exercise. Similar to what MCAGCC provides for Marine Corps units, the Joint Readiness Training Center at Fort Polk is an ideal location for Army infantry units to conduct integrated live-fire training in preparation for a deployment (Cole, 2021). However, just like MCAGCC, Fort Polk does not replicate the terrain and environment that Army units will face during a deployment to or potential conflict in the USINDOPACOM region (Cole, 2021). The landscape of Fort Polk consists of a “240,000-acre Joint Readiness Training Center that is one of the Army’s premier proving grounds,

but Fort Polk is not jungle and ocean like Hawaii is, or part of the Pacific where the 25th Infantry Division is anticipating fighting its next fight” (Cole, 2021).

One of the main training areas in Hawaii, the Kahuku Training Area, provides an opportunity for Soldiers and Marines to conduct training in an environment that replicates the environment that will be encountered throughout the USINDOPACOM region (Patterson, 2016). An example of the terrain encountered in the Kahuku Training Area is illustrated in Figure 5. In addition to the training value gained by conducting training in Hawaii, there will be a decrease in logistical requirements due to remaining in Hawaii for training. The decrease in logistical requirements of sending approximately 5,000 soldiers to Fort Polk also results in a reduction of annual spending by the 25th Infantry Division (Cole, 2021).



Figure 5. Kahuku Training Area, Hawaii. Source: Patterson (2016).

The Army has set the precedence for all services with regards to evolving its institution training to prepare for a conflict in the Pacific. “With that logic in mind—and a cost savings that will likely run into the millions of dollars—the Army intends to break the paradigm and set a new precedent by holding the first-ever Home-station Combat training Center evolution, in this case in Hawaii” (Cole, 2021). Rebuilding military readiness and conducting affordable/realistic training are two benefits of the 25th Infantry Division conducting the exercise in Hawaii. These benefits are directly linked to the first and third distinct lines of effort that were outlined in the 2018 National Defense Strategy summary (Secretary of Defense, 2018, p. 5).

The third benefit of conducting the exercise on the Hawaiian Islands, was the ability to conduct the exercise with allied Nations from the Pacific region—Indonesia and Thailand: “The Joint Pacific Multinational Training Center exercise on Oahu and Hawaii focusing on training for the 3rd Infantry Brigade Combat Team at Schofield, which has about 4,000 soldiers, alongside about 200 Indonesian and Thai soldiers” (Cole, 2021). This benefit is also linked to the distinct lines of effort that were outlined in the 2018 National Defense Strategy. This benefit was linked to the second distinct line of effort outlined in the 2018 National Defense Strategy summary which was, “strengthening alliances as we attract new partners” (Secretary of Defense, 2018, p. 1). Over the duration of this exercise the Army was able to incorporate approximately 12,000 soldiers, helicopters, logistical vehicles, artillery, and amphibious vessels into training (Cole, 2021).

For perspective, the approximate 12,000 soldiers and the list of combat systems were not consolidated in one central location during the exercise. These forces and equipment were operating dispersed throughout three different training locations, on two separate Hawaii Islands: The Island of Oahu and the Island of Hawaii (Cole, 2021). Moreover, these forces were phased into the training exercise over the course of 14 days (Cole, 2021). For example, the personnel and equipment needed to support the amphibious logistics operations that moved personnel and equipment from the Island of Oahu to the Island of Hawaii via Army logistics support vessels, were not utilized at the beginning of the training exercise (Cole, 2021). Furthermore, included in the approximate 12,000 troops

that participated in the exercise were soldiers designated to act as an opposing force and additional enabler support (Cole, 2021).

The number of Army personnel that participated in this exercise is approximately five times the amount of personnel that is projected to comprise the Third Marine Littoral Regiment (DC DC&I, 2021b, p. A-1). However, this number is fairly close to the number of personnel that participates in the SLTE conducted at MCAGCC. The estimated number of personnel that participate in the execution of the force-on-force MWX is anywhere from 4,000 to 10,000 participants and millions of dollars' worth of gear, equipment, and ammunition (Obsidian Solutions Group, 2020, p. 3). The Army, specifically the 25th Infantry Division has demonstrated the ability to learn as an organization through the exploration of a new way to conduct training within the Hawaiian Islands. This was done through the planning, coordination, and conduct of a multinational certification exercise within the constraints of the Hawaiian Islands. Moreover, this exercise was conducted with a force much larger than what is expected of the Marine Littoral Regiment.

The Army has taken the lead in conducting a proof of concept with regards to conducting a large-scale pre-deployment training exercise in the USINDOPACOM region, specifically the Hawaiian Islands. Being that the MLR is expected to conduct similar operations in the USINDOPACOM region, the Marine Corps and Third Marine Infantry Division should exploit the knowledge and experience gained through this Army led training exercise. Doing so would assist in exploring ways to replicate a training exercise similar to the 14-day training exercise conducted by the Army's 25th Infantry Division. This exploitation and exploration can result in a reduction of costs associated with pre-deployment training for a MLR along with the ability to train in an environment similar to the one in which the MLR is expected to deploy and conduct naval expeditionary operations.

F. LEARNING ORGANIZATIONS

“By three methods we may learn wisdom: First, by reflection, which is the noblest; Second, by imitation, which is easiest, and third by experience, which is the bitterest.”

—Confucius

To paraphrase Confucius, as an organization there are three options when it comes to learning or developing. The first is to reflect on experiences at which point favorable approaches to problems may identified (Brewer, 2020, p. 45). The second option is to imitate what has been witnessed from past leaders in hopes of getting favorable results (Brewer, 2020, p. 45). The last option is to learn through a new experience in which there is little application of the lessons learned or recommendations from those who have been in the same position before; the last option is the least optimal choice (Brewer, 2020, p. 45). Shortly following the assumption of his duties as Commandant of the Marine Corps, General Berger sought to re-invigorate the Marine Corp’s efforts to be a learning organization (CMC, 2019, p. 16). In reflecting on the status of the Marine Corps, he assessed that the organization was not an efficient and effective learning organization (CMC, 2019, p. 17). Moreover, he assessed that the Marine Corps has developed an imbalance in the ability to think, innovate, and change: “We are currently imbalanced across these learning activities” (CMC, 2019, p. 17).

The commandant has stated that the organization as a whole must evolve to be relevant in the future strategy environment. Furthermore, he assessed that for the Marine Corps to be successful it has to evolve the current methodology of *adult learning*⁶ (CMC, 2019, p. 17). This includes the way the Marine Corps trains and evaluates units prior to deployment. To grow as a learning organization, the Marines Corps can review some of the research conducted in the organizational behavior field to gain an understanding of how other organizations have developed into successful organizations. To provide some insight

⁶ In the 2019 *Commandant’s Planning Guidance*, General Berger refers to adult learning in the Marine Corps as the way in which Marines learn throughout their time in service (CMC, 2019, p. 17). This learning methodology is mainly focused on teamwork, problem solving, and the ability to transition through the OODA (Observe, Orient, Decide, Act) process (CMC, 2019, p. 17).

into the concept of a learning organization, the next portion of this chapter will tie in a few articles that discuss the topic of being a learning organization.

Successful organizations are those organizations that can be described as learning organizations (Levitt & March, 1998, p. 320). Learning organizations are those that conduct detailed assessments of the current state of affairs and appropriately apply the changes necessary to remain competitive and victorious in their respective areas of expertise (Levitt & March, 1998, p. 321). The assumption can be made that this is what General Berger and senior leaders within the Marine Corps did prior to the release of the 2019 Commandant's Planning Guidance. In the article, "Organizational Learning," Levitt and March aim to provide the reader with an understanding of how learning happens within organizations and how it can be used in organizations to facilitate learning. The three lenses that are used in this article are how organizations learn from their own personal experiences, how organizations learn from history or through reviewing the experiences of others, and what organizations do to internalize the experiences to ensure that mistakes are not repeated (Levitt & March, 1998, p. 320). In addition to these three lenses, the authors provided a behavioral studies analysis of the sociological aspects that goes into learning within organizations (Levitt & March, 1998, p. 320).

The first organizational learning lens that the authors discuss is, "learning from direct experience" (Levitt & March, 1988, p. 321). Though costly and time consuming, this form of learning can have the highest level of impact and render the largest number of lessons for the future. Moreover, the authors argue that this method of organizational learning is often considered inefficient because it is more so a means of trial and error: "These efforts are, for the most part, variations on themes of trial-and-error learning or organizational search" (Levitt & March, 1988, p. 322). Continuing with the current SLTE design means that MLR units would increase their proficiency in littoral warfare through direct experience during a conflict vice building proficiency in a pre-deployment training environment. This method of learning is not ideal for MLR units. This method of learning would mean that the cost for learning would risk the lives of Marines and Sailors. As the authors of the article stated, this method of learning is not ideal (Levitt & March, 1998, p. 322). The lessons learned from direct experience can vary depending on the interpretation

of the overall experience. The authors argue that the lessons learned or the deficiencies in an experience are not always seen by all: “What has happened is not always obvious, and the causality of events is difficult to untangle” (Levitt & March, 1988, p. 323).

The second organizational learning lens is how organizations learn through history or through the learning experiences of others. Identifying the different means of which an organization learns, and compiling lessons learned are not the only steps to becoming a learning organization. A key factor of whether or not an organization becomes a learning organization is whether or not the lessons learned are used to change routines, build efficiency, and build overall effectiveness within the organization (Levitt & March, 1998, p. 333). Levitt and March argue that this is done through increasing the intelligence within an organization through the use of the lessons learned: “Organizational learning from experience is not only a useful perspective from which to describe organizational change; it is also an important instrument of organizational intelligence” (Levitt & March, 1988, p. 333). This type of learning is conducted in the Marine Corps through the use of after-action reviews.

The third organizational lens is what organizations do to internalize the experiences to ensure that mistakes are not repeated (Levitt & March, 1988, p. 333). As means to ensuring that mistakes are not repeated is to increase the overall intelligence of the organization (Levitt & March, 1988, p. 333). Intellectual growth and development are going to be a critical requirement needed to succeed on the battlefield of the future. This will require the Marine Corps to look at different ways to approach training and education. Marines should approach education the same way they approach the concept of chow (food) while conducting operations in the field: “it is continuous.” To accomplish this, individual Marines must have a burning desire to seek out education and opportunities to learn, as this will develop the urge to be a life-long learner (Mullen III, 2019, p. WE21). Being a lifelong learner is important because it helps to build intuition and cognitive recognition in situations.

Building intuition and cognition in situations is imperative to the ability of leaders to think critically and solve problems. This ability has been demonstrated in the past by Marine leaders such as Lieutenant General (LtGen) Paul Van Riper. LtGen Van Riper is

most notably known for his participation in a Department of Defense wargame known as the *Millennium Challenge* in 2002 (NOVA, 2004). In an interview conducted after the historic wargame, LtGen Van Riper stressed the importance of leaders being able to conduct *intuitive decision-making* vice *analytical thinking* when dealing with complex problems (NOVA, 2004). Analytical thinking can be described as more of a checklist or linear approach to problem solving: “Analytical Thinking is traditionally done in well-structured environments with little to no ambiguity” (NOVA, 2004).⁷ The problem set is usually linear in nature. Using linear problems for wargames and decision-making exercises allows commanders and planners to apply processes and checklists to problems to solve them (NOVA, 2004). Rarely does this approach force critical thinking to occur (NOVA, 2004). These types of thinking *Systems Analytics* have been around for a while and despite the elegance in decision making, do little in the domain of human activity, i.e., war (NOVA, 2004).

Intuitive decision making is one of two perspectives of “which are applicable to problems that are neither linear nor simple and emphasize uncertainty, ambiguity, and the limits of human rationality” (NOVA, 2004). This type of decision making proves that most decisions are made using “pattern recognition and intuition enabled by mental or cognitive models” (NOVA, 2004). *Systemic decision making* which is “the most difficult form of decision making is conducted when confronted with wicked problems and when you do not recognize patterns” (NOVA, 2004). Intuitive decision making is an ideal form of decision making to use as a leader, but you also have to be careful as to not apply a “cookie-cutter” approach to like problems (NOVA, 2004).

Current Marine Corps leadership stresses that the Marine Corps should grow more as a learning organization. Specifically, an organization with an *information age* approach to learning that prioritizes learning through problem solving vice rote memorization which

⁷ In 2002, LtGen Paul Van Riper USMC, served as the “enemy” force commander for a \$250 million Joint Force war game called the “Millennium Challenge.” In the first days of the war game, LtGen Van Riper sank 16 American ships which resulted in a “pause and restart” to the entire war games. In an interview with NOVA after the war game, LtGen Van Riper talked about the type of thinking that he observed during the Millennium Challenge (NOVA, 2004).

was common during the *industrial age*⁸ (CMC, 2019, p. 16). The following quote from the 2019 Commandant's Planning Guidance shows the emphasis put on learning from General Berger: "What we need is an information age approach that is focused on active, student-centered learning using a problem-posing methodology where our students/trainees are challenged with problems that they tackle as groups in order to learn by doing and also from each other" (CMC, 2019, p. 17). To learn by doing means that Marines should train in a meaningful way, which should replicate what will be experienced in times of conflict.

To show sincere dedication to the evolution of the Marine Corps as a whole, the current commandant directed the development of a publication on learning. The result of this direction given by General Berger is Marine Corps Doctrinal Publication (MCDP) 7, *Learning*. This publication explains the importance of learning occurring within the Marine Corps. Moreover, this publication characterizes learning as a key component in preparing the Marine Corps for the future operating environment (Headquarters United States Marine Corps, 2020a, pg. 1-3). Marine Corps Doctrinal Publication 7 *Learning* argues that the Marine Corps must be the most versatile and flexible organization within the Department of Defense: "The Marine Corps, as the Nation's force-in-readiness, must have the versatility and flexibility to effectively fight-and succeed-in and situation and at any intensity across the full spectrum of conflict, whenever and wherever the Nation calls. To meet these demands, it is critical that Marines recognize that learning has a direct impact on warfighting" (Headquarters United States Marine Corps, 2020a, pg. 1-3).

MCDP 7 even places responsibility on the individual Marines in the organization to engage in learning as it is a professional responsibility (Headquarters United States Marine Corps, 2020a, pg. 1-3). "Learning is a professional responsibility for all Marines at all levels. Marines must develop the habit of continuous learning early in their careers to set the conditions for success in increasing levels of responsibility" (Headquarters United States Marine Corps, 2020a, pg. 1-3). The result of adherence to this direction given by

⁸ The information age approach seeks to optimize the quality of training Marines along with the amount of time it takes a Marine to complete training (CMC, 2019, p. 13). The previous industrial age model sought to maximize the quantity of Marine receiving training, without paying specific attention to the quality or duration of time spent training Marines (CMC, 2019, p. 13).

General Berger is a more professionally educated force. A more professional force leads to a force with a higher level of organizational intelligence. Intelligence that will be needed in the future to solve problems. The Marine Corps as a whole must be able to think critically about wicked problems, instead of taking the traditional analytical approach to solving problems. Collectively this will help the Marine Corps remain competitive and evolve in an ever-changing environment.

The Nation expects the Marine Corps to be ready to protect and serve the Nation's calling around the world. To do so, the Marine Corps must ensure that everything it does contributes to an effective, lethal, righteous, and exemplary fighting organization that will compete and win in the future strategic environment. The ability to rapidly deploy in support of operations around the globe is what sets the Marine Corps apart from the other services. Moreover, the ability to conduct multi-service operations with the Navy as a naval expeditionary unit, provides the nation with a force to respond to different crises around the globe that could not otherwise be handle by a single service. Technical and tactical proficiency is essential to mission success when responding to a crisis. Moreover, technical, and tactical proficiency are key components of the Navy and Marine Corps team successfully operating together. Subordinate units within the Navy and Marine Corps team that becomes extremely proficient in tactics, techniques, and procedures (TTPs) at their level characterize proficient naval expeditionary units.⁹

Due to the frequency in which leadership changes within the Marine Corps, a myopic or nearsighted approach to training and education is sometimes the norm.¹⁰ In their article, "The Myopia of Learning," Levinthal and March examine process of experiential learning by viewing it as an instrument of organizational intelligence (Levinthal and March, 1993, p.95). Moreover, they offer that an increase in organizational intelligence leads to results that are consistent with the direction in which the organization has aligned from a strategic standpoint (Levinthal and March, 1993, p.95). Experiential

⁹ "Naval expeditionary units" are comprised of Navy and Marine units embarked aboard Navy amphibious vessels (Naval Doctrine Publication 1, 2020).

¹⁰ Marine Corps field grade officers that are selected to command a unit via a *Command Selection Board*, traditionally serve in this billet for a total of 24 months (Military Leadership Diversity Commission, 2010, p. 2).

learning is defined as improvements to performance or achieving the end result through the action of repeating a similar task over time; this is also categorized as *repetition-based improvements* (Levinthal and March, 1993, p.95). Not to be confused with a trial-and-error approach, experiential learning seeks to obtain results in specific well-defined objectives.

These objectives are reached through the utilization of information or ‘organizational intelligence’ to identify any alternatives in the process of obtaining the objectives (Levinthal and March, 1993, p.96). Experiential learning is present within the Marine Corps through the use of after-action reviews (CMC, 2019, p. 17). However, for the Marine Corps to progress, the information collected in the after-action reviews must be disseminated to the widest possible audience to ensure that there is an increase in the organization’s overall intelligence in the respective area. Furthermore, an increase in organizational intelligence is what General Berger aims to achieve with a renewed focus on education and learning within the organization (Headquarters United States Marine Corps, 2020a, pg. 1-3). This increase can assist in combating against organizational myopia within the Marine Corps.

Levinthal and March offer that organizations with a high level of organizational intelligence share common characteristics. One characteristic is having the ability to identify the policies and processes that may cause *myopia* within the organization (Levinthal and March, 1993, p.101). Moreover, the authors discuss ways for organizations to fight against the *myopia* or *nearsightedness* involved in developing a learning organization (Levinthal and March, 1993, p.95). Myopia in an organization leads to an organization overlooking the long-term of strategic goals of the organization. Levinthal and March state that this due to the attractiveness of focusing on the short-term; “it is fairly easy to make an argument that any consideration of the future must accept survival in the short run” (Levinthal and March, 1993, p.96). A means to overcome organizational myopia in an organization is to overcome the biases that have been formed by a safe and nearsighted focus within the organization. An example of overcoming biases is the institutional bias formed within the Marine Corps regarding the ideal location to conduct a SLTE. MCAGCC provides Marine Corps units the best possible location to conduct live-fire combined arms exercises with any live-fire munition. However, for long-term focus on

adequately preparing a MLR for naval expeditionary operations; a location where integration with amphibious ships and other naval vessels is present would better prepare a MLR for operations in the USINDOPACOM region.

The second characteristic of an organization with a high level of intelligence is an organization that explores ways to improve or “engages in exploration—the pursuit of new knowledge, of things that might come to be known and the development of things already known” (Levinthal and March, 1993, p. 105). In addition to exploration, highly intelligent organizations look for ways to exploit the viable knowledge and experience that is present in the organization. Levinthal and March describe this as “engaging in a sufficient amount of exploitation to ensure the organization’s current viability and, at the same time, to devote enough energy to exploration to ensure its future viability” (Levinthal and March, 1993, p. 105). In preparation for the future, it is imperative that the Marine Corps explore ways to ensure that the individuals and the organization is adequately prepare for the various wicked problems that may arise. Moreover, the Marine Corps must exploit the knowledge, experience, and creativity that is currently present in the organization to remain relevant as a fighting force.

The third and final characteristic of a highly intelligent organization identified by Levinthal, and March is, an organization with effective strategic management. According to the authors effective strategic management is, “the art of dealing with three grand problems of decision making: the problem of ignorance, the problem of conflict, and the problem of ambiguity” (Levinthal and March, 1993, p. 109). Like the organizations discussed by Levinthal and March, the Marine Corps enterprise must have effective strategic management to increase organizational intelligence and remain competitive. This strategic management must involve navigating the ambiguity of the National Defense Strategy, minimizing the level of ignorance regarding peer competitors around the globe, and reduce organizational conflict. The result of this is an effective fighting force able to handle the challenges of any wicked problems that will be encountered in the future.

This chapter provided some history on EABO, a more in depth understanding of why it is important for the Marine Corps to be prepared for operations in a multi-domain environment, and insight on the benefits of the Marine Corps maturing as a learning

organization. As discussed in this chapter, for the Marine Corps to continue to evolve as a learning organization, Marines must understand the relevance of learning in both the training and educational environment (Headquarters United States Marine Corps, 2020a, pg. 1-3). Furthermore, an environment of *continuous learning* must be adopted by the most senior leaders all the way down to the brand-new Marines serving in their first tour of duty (Headquarters United States Marine Corps, 2020a, pg. 1-3). Lastly, the commanders and senior enlisted leaders that are in charge of the educational and training units must support the *continuous learning* mantra. This mantra can be supported by the two functional units by providing an educational curriculum that requires thought-provoking critical thinking and tough realistic training comparable to what will be encountered during a deployment (Headquarters United States Marine Corps, 2020a, pg. 1-3).

IV. COST BENEFIT ANALYSIS

This chapter contains the quantitative analysis conducted to support a recommendation of where the ideal location for a MLR SLTE should be. The quantitative method used for analysis is a Cost Benefit Analysis (CBA). The primary purpose of a CBA is to assist executives and senior leaders in decision making by providing measurable factors to assess (Boardman, Greenberg, Vining, and Weimer, 2018, p. 2). Moreover, it assists in the prioritization and efficient allocation of resources that an organization has (Boardman, Greenberg, Vining, and Weimer, 2018, p. 2). In the case of this CBA the primary resources to be assessed are personnel and costs. Traditionally, CBAs are completed by using a nine-step assessment process (Boardman, Greenberg, Vining, and Weimer, 2018, p. 6). This nine-step process will “assess alternatives, benefits of each, identify impacts of each course of action, predict the impacts, quantitatively over time, monetize the impacts, discount the benefits and costs, compute a net present value, perform a sensitivity analysis, and provide a recommendation based on the value of the impacts identified” (Boardman, Greenberg, Vining, and Weimer, 2018, p. 6). While it is impossible to monetize all of the benefits, it is possible to identify the tradeoff between training value and the costs associated with conducting training.

A. STEP 1: SPECIFY ALTERNATIVES

The 2019 Commandant’s Planning Guidance laid the foundation for the organizational changes that took place shortly after its publication and dissemination. Therefore, it was not surprising to see the redesignation of Third Marine Infantry Regiment to Third Marine Littoral Regiment (DC DC&I, 2021b, p. 1-3). With a redefined mission, comes a requirement to review the means of training in preparation for conflict. As its namesake would suggest, the Third Marine Littoral Regiment and all subsequent Littoral Regiments that will be formed in the future are designed specifically for littoral warfare in naval expeditionary operations (DC DC&I, 2021b, p. A-1). Moreover, the specific region in which these Regiments are to focus their attention is the USINDOPACOM AOR.

To prepare for operations and conflict in the USINDOPACOM AOR, the MLR should conduct training that compliments the tasks that are expected of the MLR — in an environment similar that replicates the environment in which these units are expected to deploy to and operate in. While conducting training at MCAGCC provides the ideal location for large scale force on force and live fire training. This venue does not replicate the terrain and weather conditions that will be encountered by Marine Littoral Regiments in the USINDOPACOM AOR. Table 1 is an illustration of the three courses of action that will be evaluated in this CBA to evaluate and recommend the ideal location to conduct a SLTE for an MLR. Following the course of action summary in Table 1 is a list of CBA assumptions illustrated in Table 2. The assumptions listed in Table 2 were made to provide validity to the scope and focus of the CBA over a period of time.

Table 1. Course of Action Summary

COA	DESCRIPTION	SUMMARY
Course of Action #1	Conduct a MLR SLTE aboard MAGTFCTC ‘STATUS QUO’	This course of action is the current model that is followed by the Marine Corps to conduct MLR SLTEs. This course of action will be referred to from here on out as “The Status Quo” course of action.
Course of Action #2	Conduct a MLR SLTE in Hawaiian Islands ‘HOME STATION’	This course of action would entail the SLTE for a MLR to be conducted at the respective home station. With Third MLR being the only task organized MLR to date, this would mean that the SLTE would be conduct aboard the Hawaiian island of Oahu and the surrounding Hawaiian Islands. This course of action will be referred to from here on out as the “Home Station” course of action.
Course of Action #3	Conduct a portion of the MLR SLTE at MAGTFCTC and the other portion in Hawaiian Islands ‘HYBRID’	Being that MAGTFCTC is the ideal location for large scale integrated live fire training, this course of action would entail conducting a portion of the SLTE aboard MAGTFCTC and another portion at the home station, aboard the Hawaiian Island of Oahu and the surrounding Hawaiian Islands. This course of action will be referred to from here on out as the “Hybrid” course of action.

Table 2. CBA Assumptions

NUMBER	ASSUMPTION
1	The U.S. INDOPACOM region will remain a main focus for the future strategic environment.
2	The objectives outlined in the 2018 National Defense Strategy summary will remain a priority.
3	The focus of the USINDOPACOM region will remain to keep a “Free and Open” Indo-Pacific region.
4	China will remain the top priority as a threat in the Indo-Pacific region.
5	EABO will remain a main focus point for the Marine Corps as it prepares for the future strategic environment
6	The MLR construct will remain in place through 2030
7	The MLR Headquarters will remain in the USINDOPACOM AO
8	A SLTE will continue to be a pre-deployment requirement
9	The duration of time allocated to conduct a SLTE will remain the same.

B. STEP 2: BENEFITS (WHO HAS STANDING)

Service Level Training Exercises contain testing and evaluation metrics to ensure that units are tactically proficient prior to departing for a deployment. (Dietz, 2013). The current SLTE design focuses heavily on desert-based tests and evaluation vice the evaluation of operations in the maritime environment. For this research, the extent of the analysis does not extend past the internal impacts of the Marines Corps. This CBA does not factor in any political impacts, community impacts, and/or state-level economic impacts.

The American taxpayers ultimately have the most amount of standing and are the highest stakeholders as any course of action selected will be funded by tax dollars. For this cost benefit analysis, the Marine Corps as an institution will be the highest level of analysis conducted. Specifically, Third Marine Infantry Division also known as 3D Marine Division (MARDIV), based out of Okinawa, Japan. This unit will be a primary party possessing standing because, 3D MARDIV is the higher headquarters for the 3D MLR. The second party possessing standing in this CBA is MAGTFTC, as they are the organization responsible for evaluating units conducting an SLTE at MCAGCC. The last party

possessing standing in this CBA is 3D MLR. Currently, 3D MLR is the only Regiment that is officially designated as a Marine Littoral Regiment.

C. STEP 3: IDENTIFY IMPACTS

There are two primary categories that will be used to identify the impacts in this CBA; they are benefits and costs (Boardman, Greenberg, Vining, and Weimer, 2018, p. 8). An assessment of the current SLTE design and associated costs was conducted to determine the impacts of each course of action (COA). Tables 3, 4, and 5 provide an illustration of the positive and negative impacts that are associated with each course of action. Further, executive leaders and planning officers within the Marine Corps have provided recent planning documents, studies, and insights into what is very much an active planning project within Headquarters, Marine Corps. The current SLTE design offers a list of benefits. However, there are a significant amount costs associated with these benefits. For this CBA the three benefit categories are costs saved on conducting a SLTE, the reduction of personnel traveling to conduct a SLTE as part of a MLR, and the increase in proficiency by training in the optimal environment; an environment that replicates where a MLR is likely to conduct operations.

This analysis identifies three different benefit categories. However, only one of the three benefit categories are monetized. This analysis does not monetize the reduction of personnel used to evaluate a SLTE for an MLR. However, it does monetize the increase in proficiency by training in an environment similar to the environment in which a MLR will likely conduct operations. The benefits of these categories will be analyzed through a qualitative analysis. All COAs were screened against the following philosophies. (1) Increased SLTE training efficiency reflects better stewardship of taxpayer dollars and is a goal of the Marine Corps as an institution. (2) Short-term increases in operating and administrative costs become long-term savings. Efficient SLTE training infrastructure, consolidated logistics and support nodes, and adaptive personnel management systems decrease administrative and logistics burden costs.

Cost categories are limited to the total costs associated with a SLTE at MCAGCC or the total costs associated with a *home station* unit training event. A unit home station

training event is commonly known as a training event that is located at or near the permanent station of the unit and does not require significant travel to conduct the training. (1) Travel and logistics costs are taken from MWX after action reviews and communication with the MAGTFTC Operations office. The *home station* training costs were provided by the 3D MARDIV comptroller's office. This research led to a detailed breakdown of all three COAs. (2) All three COAs have administrative and logistics costs associated. However, this CBA proposal does not address any environmental or political costs associated with conducting a SLTE in the state of Hawaii or reducing the amount of training that is conducting at MCAGCC in Twenty-Nine Palms, California.

Table 3. Course of Action #1 "Status Quo" Impacts.

CATEGORY	DESCRIPTION
Positive Impacts	-TTECG evaluators will not have to send a Mobile Training Team (MTT) to Hawaii to evaluate an SLTE for the MLR. -MLR units have sufficient space and training areas to conduct a force-on-force exercise against a force similar in composition and capabilities. -MLR units can utilize kinetic and non-kinetic fires with minimal restrictions. -MLR units can conduct fire and maneuver with minimal environmental constraints.
Negative Impacts	-MLR units will continue to train in terrain unlike the terrain that will be encountered in the USINDOPACOM AOR. -MLR units will continue to pay for personnel and gear to be shipped from Hawaii to MCAGCC to conduct a SLTE. -MAGTFTC will continue to spend ~\$11 million per SLTE exercise to train MLR units.

Table 4. Course of Action #2 “Home Station” Impacts.

CATEGORY	DESCRIPTION
Positive Impacts	-MLR units will conduct SLTE events in terrain similar to the terrain that will be encountered in the U.S. INDOPACOM AOR. -MLR units will not have to pay for personnel and gear to be shipped to MCAGCC to conduct a SLTE. Therefore, units will reduce travel costs that would be spent moving personnel and gear from MCAGCC to conduct a SLTE. -MAGTFCTC will not have to spend ~\$10million per SLTE exercise to train MLR units. -Conducting large scale, multi-service exercises in Hawaii will demonstrate to allied nations from the Pacific that the U.S. is vested in the Pacific. -Conducting large scale, multi-service exercises in Hawaii will demonstrate to competitors that the U.S. has the ability to adapt and train for conflict in the future strategic environment. Specifically, it will demonstrate to China that the U.S. is focused on and preparing for a conflict within the Pacific.
Negative Impacts	-TTECG evaluators will have to send a Mobile Training Team (MTT) to Hawaii to evaluate an SLTE for the MLR. -MLR units will have less space to conduct a force-on-force exercise against another force. -MLR units could potentially encounter environmental constraints that would reduce the types and number of munitions used during the STLE. -MLR units will not have the same liberties to conduct kinetic and non-kinetic fires as they would at MCAGCC. -MLR units will not have the same liberties to conduct fire and maneuver as they would at MCAGCC.

Table 5. Course of Action # 3 “HYBRID” Impacts.

CATEGORY	DESCRIPTION
Positive Impacts	-MLR units will conduct SLTE events in terrain similar to the terrain that will be encountered in the U.S. INDOPACOM AOR. -MLR units have sufficient space to conduct a force-on-force exercise against a force similar in composition and capabilities if this portion is conducted at MCAGCC. -MLR units can utilize kinetic and non-kinetic fires with minimal restrictions if this portion is conducted at MCAGCC. -MLR units can conduct fire and maneuver with minimal space constraints if this portion is conducted at MCAGCC. -MAGTFTC will decrease the total dollar amount spent per SLTE exercise to train MLR units.
Negative Impacts	-MLR units will have to pay for personnel and gear to be shipped from Hawaii to MCAGCC to conduct a portion of the SLTE. Therefore, logistical costs may increase. -MAGTFTC will still have to fund a partial SLTE to certify MLR units at MCAGCC.

Continuing with the status quo of conducting a SLTE for a MLR at MCAGCC in Twenty-Nine, Palms, California yields a number of positive impacts. Two of the most valuable impacts are (1) the ability to utilize kinetic and non-kinetic fires with minimal restrictions and (2) the ability to conduct force-on-force against an opposing force of similar composition and disposition.¹¹ Even though these impacts do not have any monetized benefits associated with them, they provide a significant amount of training value for the units participating in a SLTE.

However, aligning the SLTE for a MLR to a training location in Hawaii will have a large number of positive tangible impacts along with intangible impacts. The positive tangible impacts are mostly measured by a reduction in the costs associated with a MLR

¹¹ Due to total size of training area available at MCAGCC, a reinforced Infantry Regiment or Marine Littoral Regiment can conduct training with adequate dispersion and space.

conducting a SLTE at MCAGCC vice conducting it in Hawaii. The intangible positive impacts are measured by the overall readiness of the MLR to conduct operations in the U.S. INDOPACOM AOR. Moreover, choosing a course of action that involves conducting a SLTE in Hawaii will assist the PACOM JFC in deterring Chinese aggression in the region through a show of force (Davidson, 2019, p. 12).

Furthermore, choosing a course of action that involves conducting a SLTE in Hawaii will coincide with two key objectives outlined in the 2018 National Defense Strategy summary, “rebuilding military readiness and conducting affordable training” (Secretary of Defense, 2018). The rebuilding military readiness aspect will be achieved by through a MLR conducting training in a location that facilitates building proficiency in the nine essential tasks assigned to a MLR (DC DC&I, 2021b, p. A-1). Lastly, objective of conducting affordable training will be met by reducing the total costs associated with conducting a SLTE for an MLR.

D. STEP 4: PREDICT IMPACTS OVER TIME

The qualitative impacts for this CBA are the reduction of personnel used to evaluate a SLTE if it is conducted in Hawaii, and the benefits of the training being conducted in an environment similar to the environment in which a MLR will likely conduct operations. The quantifiable impacts for this CBA are the total costs associated with conducting a service level training exercise for a Marine Littoral Regiment. The only fully task organized Marine Littoral Regiment currently resides in Kaneohe Bay, Hawaii, along with all subordinate units. The current model for a service level training exercise requires the 3D Marine Littoral Regiment to transport all personnel and a large portion of the necessary gear for training to MCAGCC, located in Twenty-Nine Palms, California to conduct a SLTE.

This section of the CBA will provide prediction for the costs associated with the three courses of action that are proposed in this project. Being that a SLTE has not been conducted in Hawaii before, there is no historical costs data associated with the cost of conducting a SLTE in Hawaii. However, for this CBA the historical data utilized will be the total costs associated with conducting a Regiment level field training exercise. By assessing

the benefits of training in the ideal environment and using the previously mentioned historical data, the following predictions are made and illustrated in Table 6.

Table 6. Course of Action Predictions.

COA	PREDICTIONS
Status Quo	-Total cost associated with conducting a SLTE at MCAGCC. -Number of Marines and Sailors transported to MCAGCC for training. -Amount of time training in the desert environment versus an ideal environment.
Home Station	-Total cost saved by conducting a SLTE in Hawaii. -Number of Marines and Sailors that do not have to be transported to MCAGCC for training. -Amount of time training in the ideal environment for a MLR deployment.
Hybrid	-Total cost saved by conducting a portion of the SLTE in Hawaii and a portion at MCAGCC. -Number of Marines and Sailors transported to MCAGCC for training. -Amount of time training in the ideal environment for a MLR deployment.

E. STEP 5: MONETIZE IMPACTS

To provide insight into how the impacts will affect the organization as a whole it is important to *monetize* each of the impacts (Boardman, Greenberg, Vining, and Weimer, 2018, p. 10). An impact is monetized when there is a dollar value added to the impact (Boardman, Greenberg, Vining, and Weimer, 2018, p. 10). For this CBA, monetizing the impact will assist the 3D MARDIV planners and institutional decision makers in comparing the quantitative differences of each the courses of action that are evaluated in this CBA. However, due to the intangible influence that some of the benefits have, this CBA does not fully monetize all benefits. For example, there is a monetized value for the cost of training a Marine in what is considered an ideal location, which is displayed in

tables 7, 8, and 9. However, it is impossible to monetize or quantify the value of training in the ideal location versus not training in the ideal location. This CBA provides monetized values to articulate that the taxpayers' dollars would be better spent by training in the ideal environment versus the potential ineffectiveness of not doing so.

The information provided in Table 7 is an illustration of the monetized value of the impacts associated with the "Status Quo" course of action. The "total cost associated with conducting an SLTE at MCAGCC" was taken from an MWX after action review. This after-action review included a total yearly cost of ~\$90 million for all SLTEs and an itemized cost per SLTE (Deputy Assistant Chief of Staff, G3, MAGTFTC, 2021). The "cost per day to train a Marine" was taken from a Center for Naval Analyses report that calculated the daily training costs for an Infantry Marine. In 2004 it cost ~\$12,000 per day to train an Infantry Marine (Hattiangadi, Kimble, Quester, and Ackerman, 2004, p. 81). The calculation for the "amount of time training in the desert environment versus an ideal environment" was derived from the "daily cost to train a Marine" multiplied by 30 to represent a 30-day training period at MCAGCC. There are some Marines and Sailors that travel to MCAGCC prior to the main body of the unit and remain behind after training is complete. However, the majority of the personnel conducting the SLTE evolution will be present at MCAGCC for approximately 30 training days.

Table 7. “Status Quo” Course of Action Impact Monetized.

COA	IMPACTS	VALUE
Status Quo	-Total cost associated with conducting (1) SLTE at MCAGCC.	\$11,600,000 ¹² (Costs)
	-Cost per day to train a Marine.	\$12,000 ¹³
	-Amount of time training in the desert environment versus an ideal environment (30-day SLTE).	\$360,000 ¹⁴ (Benefits)
	Total:	~\$11,960,000

The information provided in Table 8 is an illustration of the monetized value of the impacts associated with the “Home Station” course of action. The “Total costs of conducting (1) home-station training event at the Regiment level” was taken from historical budget reports for 3D MARDIV. This budget report included the total budget for home-station training for 3D Marine Regiment for FY19 to FY20. The total of \$2,419,564 in FY20 was the total cost associated with conducting the *Bougainville Series* pre-deployment training exercise (Assistant Chief of Staff, G8 Comptroller, 3D MARDIV, 2022). The *Bougainville Series* is a three-part Regiment led training exercise; spanning across approximately 30-days and is conducted on the Hawaiian Island of Oahu (Assistant Chief of Staff, G8 Comptroller, 3D MARDIV, 2022). 3D MLR serves as the higher headquarters, and evaluators for this training evolution. Moreover, there is no evaluator support from TTECG in the conduct of this training evolution. Furthermore, 3D MLR has to provide its own ADFOR to conduct any force-on-force training against the EXFOR.

¹² This cost is taken from historical budget reports for MWXs conducted in FY20 (Deputy Assistant Chief of Staff, G3, MAGTFCTC, 2021).

¹³ This cost is for an Infantry Marine. However, can be used as a starting point to calculate the daily training cost for Marines participating in a SLTE.

¹⁴ The “the amount of time training in the desert environment is directly correlated with the time that 3D MLR Marines are not training in Hawaii or an environment in the USINDOPACOM region.

Table 8. “Home Station” Course of Action Impact Monetized.

COA	IMPACTS	VALUE
Home Station	-Total costs of conducting (1) Home-Station training event at the Regiment level.	\$2,419,564 ¹⁵ (Costs)
	-Cost per day to train a Marine.	\$12,000
	-Amount of time training in the ideal environment for a MLR deployment (30-day SLTE).	\$360,000 (Benefits)
	Total:	~\$2,779,564

The information provided in Table 9 is an illustration of the monetized value of the impacts associated with the Hybrid course of action. There is no historical cost data for a unit that has conducted a split SLTE by conducting a portion of the training via “Home Station” and a separate portion of the training at MCAGCC. The calculation for the “total costs of conducting a portion of the SLTE at the home station and a portion at MCAGCC” was derived by taking the total costs for a 15-day SLTE at each location; in Hawaii and at MCAGCC. For this course of action, the distribution of the amount of training days was split evenly between both locations. The total number of training day at each location can be adjusted to facilitate a sufficient amount of training time tailored to each location.

¹⁵ Total cost associated with the *Bougainville Series* training exercise (Assistant Chief of Staff, G8 Comptroller, 3D MARDIV, 2022).

Table 9. “HYBRID” Course of Action Impact Monetized.

COA	IMPACTS	VALUE
Hybrid	-Total cost of conducting a portion of the SLTE in Hawaii and a portion at MCAGCC.	\$7,009,782 ¹⁶ (Costs)
	-Cost per day to train a Marine.	\$12,000
	-Amount of time training in the ideal environment for a MLR deployment (30-day SLTE, split between two locations).	\$360,000 ¹⁷ (Benefits)
	Total:	~\$7,369,782

F. STEP 6: DISCOUNTED BENEFITS AND COSTS

In this step of the CBA the total future value of the benefits of training in the ideal environment and the total future costs of conducting an SLTE at each location are calculated to compare the total dollar amount spent over a seven-year period. Additionally, the total present value of the benefits of training in the ideal environment and the total present value of the of conducting and SLTE at each location will be calculated by discounting the benefits and costs per year¹⁸ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12). For this CBA discounting is not to be confused with factoring for inflation.

The discounting calculation is done by using the Office of Management and Budget *discount rate* to obtain the present value of what future costs are associated with each course of action (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12). While inflation is calculating the decrease in the power of money or the increase in the price of goods (Boardman, Greenberg, Vining, and Weimer, 2018, p. 144). Furthermore, the discount rate is the interest rate used to calculate the present value of the expected yearly benefits and

¹⁶ The calculation for the total costs saved by conducting a portion of the SLTE at the home station and a portion at MCAGCC was derived by taking the total costs for a 15-day SLTE at each location.

¹⁷ The calculation for the amount of time training in the ideal environment was derived by calculating the cost per Marine for 15 days of training at each location.

¹⁸ “Discounting is not the same and has nothing to do with factoring in inflation” (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12).

costs (Office of Management and Budget, 2020, p. 18). “The current Office of Management and Budget discount rate is 7 percent annually” (Office of Management and Budget, 2020, p. 7).

For this CBA the present value will be calculated for a seven-year period, beginning with FY23, and ending with FY30. The formula for calculating the present value of benefits (PV(B)) is $PV(B) = B / (1 + r)^t$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12). In this formula B is the total annual value for benefits. In this case the benefits are the number of days spent training in the ideal environment. The r in this formula is the discount rate which is currently seven percent. Lastly, the t in the formula is the time. This time will represent the year number throughout the duration the calculation. The formula for calculating the present value of costs (PV(C)) is $PV(C) = C / (1 + r)^t$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12). In this formula C is the total annual value for costs. In this case the costs are the total costs associated with conducting an SLTE. The r in this formula is the discount rate which is currently seven percent. Lastly, the t in the formula is the time. This time will represent the year number throughout the duration the calculation.

The totals of \$2.8 million and \$92.8 million in Table 10 are an illustration of the total amount of future benefits value and future SLTE costs over a seven-year period for the “Status Quo” course of action. The totals of \$2.3 million and \$74.1 million in Table 10 are an illustration of the present values of the future benefits value and SLTE costs over seven-year period after being discounted.¹⁹ The totals of \$2.3 million and \$74.1 million in Table 10 are the amounts would be needed now to cover the future benefits value and the future costs of conducting SLTEs over a seven-year period.

¹⁹ The present value of benefits (PV(B)) is $PV(B) = B / (1 + r)^t$ and the present value of costs (PV(C)) is $PV(C) = C / (1 + r)^t$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12).

Table 10. “Status Quo” Course of Action Benefits and Costs Discounted.

Fiscal Year	Future Benefits Value	Future SLTE Costs	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)
2023 (Year 0)	\$360,000.00	\$11,600,000.00	\$360,000.00	\$11,600,000
2024 (Year 1)	\$360,000.00	\$11,600,000.00	\$336,448.60	\$10,841,121
2025 (Year 2)	\$360,000.00	\$11,600,000.00	\$314,437.94	\$10,131,889
2026 (Year 3)	\$360,000.00	\$11,600,000.00	\$293,867.24	\$9,469,055
2027 (Year 4)	\$360,000.00	\$11,600,000.00	\$274,642.28	\$8,849,584
2028 (Year 5)	\$360,000.00	\$11,600,000.00	\$256,675.02	\$8,270,640
2029 (Year 6)	\$360,000.00	\$11,600,000.00	\$239,883.20	\$7,729,570
2030 (Year 7)	\$360,000.00	\$11,600,000.00	\$224,189.91	\$7,223,897
Total Over 7-Year Period	\$2,880,000.00	\$92,800,000.00	\$2,300,144.18	\$74,115,757

The totals of \$2.8 million and \$22.3 million in Table 11 are an illustration of the total amount of future benefits value and future SLTE costs over a seven-year period for the “Home Station” course of action. The totals of \$2.3 million and \$17.7 million in Table 11 are an illustration of the present values of the future benefits value and SLTE costs over seven-year period after being discounted.²⁰ Moreover, the totals of \$2.3 million and \$17.7 million in Table 11 are the amounts that would be needed now to cover the future benefits value and the future costs of conducting SLTEs over a seven-year period.

²⁰ The present value of benefits (PV(B)) is $PV(B) = B / (1 + r)^t$ and the present value of costs (PV(C)) is $PV(C) = C / (1 + r)^t$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12).

Table 11. “Home Station” Course of Action Benefits and Costs Discounted.

Fiscal Year	Future Benefits Value	Future SLTE Costs	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)
2023 (Year 0)	\$360,000.00	\$2,779,564.00	\$360,000.00	\$2,779,564.00
2024 (Year 1)	\$360,000.00	\$2,779,564.00	\$336,448.60	\$2,597,723.36
2025 (Year 2)	\$360,000.00	\$2,779,564.00	\$314,437.94	\$2,427,778.85
2026 (Year 3)	\$360,000.00	\$2,779,564.00	\$293,867.24	\$2,268,952.19
2027 (Year 4)	\$360,000.00	\$2,779,564.00	\$274,642.28	\$2,120,516.07
2028 (Year 5)	\$360,000.00	\$2,779,564.00	\$256,675.02	\$1,981,790.72
2029 (Year 6)	\$360,000.00	\$2,779,564.00	\$239,883.20	\$1,852,140.86
2030 (Year 7)	\$360,000.00	\$2,779,564.00	\$224,189.91	\$1,730,972.76
Total Over 7-Year Period	\$2,880,000.00	\$22,236,512.00	\$2,300,144.18	\$17,759,438.81

The totals of \$2.8 million and \$58 million in Table 12 are an illustration of the total amount of future benefits value and future SLTE costs over a seven-year period for the “HYBRID” course of action. The totals of \$2.3 million and \$47 million in Table 12 are an illustration of the present values of the future benefits value and SLTE costs over seven-year period after being discounted.²¹ Moreover, the totals of \$2.3 million and \$47 million in Table 12 are the amounts that would be needed now to cover the future benefits value and the future costs of conducting a SLTE split between two locations, over a seven-year period.

²¹ The present value of benefits (PV(B)) is $PV(B) = B / (1 + r)^t$ and the present value of costs (PV(C)) is $PV(C) = C / (1 + r)^t$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 12).

Table 12. “Hybrid” Course of Action Benefits and Costs Discounted.

Fiscal Year	Future Benefits Value	Future SLTE Costs	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)
2023 (Year 0)	\$360,000.00	\$7,369,782.00	\$360,000.00	\$7,369,782.00
2024 (Year 1)	\$360,000.00	\$7,369,782.00	\$336,448.60	\$6,887,646.73
2025 (Year 2)	\$360,000.00	\$7,369,782.00	\$314,437.94	\$6,437,053.02
2026 (Year 3)	\$360,000.00	\$7,369,782.00	\$293,867.24	\$6,015,937.40
2027 (Year 4)	\$360,000.00	\$7,369,782.00	\$274,642.28	\$5,622,371.40
2028 (Year 5)	\$360,000.00	\$7,369,782.00	\$256,675.02	\$5,254,552.71
2029 (Year 6)	\$360,000.00	\$7,369,782.00	\$239,883.20	\$4,910,796.93
2030 (Year 7)	\$360,000.00	\$7,369,782.00	\$224,189.91	\$4,589,529.84
Total Over 7-Year Period	\$2,880,000.00	\$58,958,256.00	\$2,300,144.18	\$47,087,670.03

There are two distinct differences between the “Status Quo” and the “Home Station” courses of action. First and foremost, the Status Quo course of action requires the unit to travel away from the unit’s home station to conduct the training, which results in a significant amount of training costs in addition to a high cost associated with the MLR not conducting training in the ideal environment. This cost is illustrated as the ‘Benefits Value’ as it is more beneficial for a MLR to train in a training environment that replicates the environment that will be encountered during a deployment to the USINDOPACOM region. The second distinction is the future and present value costs associated with the two courses of action. While the first two courses of action have distinct differences the third course of action does not. The “HYBRID” course of action also has travel costs associated with it as well as high future and present value costs.

G. STEP 7: NET BENEFIT PER ALTERNATIVE

Step 7 of the CBA provides an overall *net present value* (NPV) for each course of action (Boardman, Greenberg, Vining, and Weimer, 2018, p. 13). “The net present value is calculated by taking the difference of the present value for the benefits and the present value of the costs associated with each course of action” (Boardman, Greenberg, Vining, and Weimer, 2018, p. 13). Table 13 provides an illustration of the net present value of the “Status Quo” course of action. The significant cost associated with this course of action is the \$74.1 million that would need to be budgeted to support the cost of conducting a SLTE at MCAGCC. The difference of the benefits value and SLTE costs discounted, leaves a bill of \$(71.8) million. Simply put, a budget of \$(71.8) million would need to be allocated today to cover the future costs of \$95.6 million to maintain the status quo over a seven-year period.

Table 13. “Status Quo” Course of Action Net Present Value.

Fiscal Year	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)	Net Present Value NPV
2023 (Year 0)	\$360,000.00	\$11,600,000	\$(11,240,000.00)
2024 (Year 1)	\$336,448.60	\$10,841,121	\$(10,504,672.90)
2025 (Year 2)	\$314,437.94	\$10,131,889	\$(9,817,451.31)
2026 (Year 3)	\$293,867.24	\$9,469,055	\$(9,175,188.14)
2027 (Year 4)	\$274,642.28	\$8,849,584	\$(8,574,942.18)
2028 (Year 5)	\$256,675.02	\$8,270,640	\$(8,013,964.66)
2029 (Year 6)	\$239,883.20	\$7,729,570	\$(7,489,686.60)
2030 (Year 7)	\$224,189.91	\$7,223,897	\$(6,999,707.10)
Total Over 7-Year Period	\$2,300,144.18	\$74,115,757	\$(71,815,612.87)²²

²² The net present value (NPV) of each course of action is $NPV = PV(B) - PV(C)$ (Boardman, Greenberg, Vining, and Weimer, 2018, p. 13).

Table 14 provides an illustration of the net present value of the “Home Station” course of action. The significant cost associated with this course of action is the \$17.7 million that will be needed to conduct a SLTE in an ideal environment. This ideal environment is an environment that will adequately prepare a MLR for what will be encountered in the USINDOPACOM region. The difference of the benefits value and SLTE costs discounted, leaves a bill of \$(15.4) million allocated now to cover the future costs and benefits value of \$25.1 million to conduct a SLTE at the MLR’s home station.

Table 14. “Home Station” Course of Action Net Present Value.

Fiscal Year	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)	Net Present Value NPV
2023 (Year 0)	\$360,000.00	\$2,779,564.00	\$(2,419,564.00)
2024 (Year 1)	\$336,448.60	\$2,597,723.36	\$(2,261,274.77)
2025 (Year 2)	\$314,437.94	\$2,427,778.85	\$(2,113,340.90)
2026 (Year 3)	\$293,867.24	\$2,268,952.19	\$(1,975,084.96)
2027 (Year 4)	\$274,642.28	\$2,120,516.07	\$(1,845,873.79)
2028 (Year 5)	\$256,675.02	\$1,981,790.72	\$(1,725,115.69)
2029 (Year 6)	\$239,883.20	\$1,852,140.86	\$(1,612,257.66)
2030 (Year 7)	\$224,189.91	\$1,730,972.76	\$(1,506,782.86)
Total Over 7-Year Period	\$2,300,144.18	\$17,759,438.81	\$(15,459,294.62)

Table 15 provides an illustration of the net present value of the “HYBRID” course of action. The significant cost associated with this course of action is the \$47 million dedicated to conducting the SLTE at two different locations. While the net present value of the benefits is not as favorable in this course of action as it was in the “Home Station”

course of action; the “HYBRID” course of action does provide the MLR with an opportunity to conduct a portion of the SLTE in a favorable environment. The difference of the benefits value and SLTE costs discounted, leaves a bill of \$44.7 million. Simply put, a budget of \$44.7 million would need to be allocated to support a course of action where the SLTE is split between two different locations, with a total future benefit value and cost of \$61.8 million.

Table 15. “HYBRID” Course of Action Net Present Value.

Fiscal Year	Benefits Value Discounted PV(B)	SLTE Costs Discounted PV(C)	Net Present Value NPV
2023 (Year 0)	\$360,000.00	\$7,369,782.00	\$(7,009,782.00)
2024 (Year 1)	\$336,448.60	\$6,887,646.73	\$(6,551,198.13)
2025 (Year 2)	\$314,437.94	\$6,437,053.02	\$(6,122,615.08)
2026 (Year 3)	\$293,867.24	\$6,015,937.40	\$(5,722,070.16)
2027 (Year 4)	\$274,642.28	\$5,622,371.40	\$(5,347,729.13)
2028 (Year 5)	\$256,675.02	\$5,254,552.71	\$(4,997,877.69)
2029 (Year 6)	\$239,883.20	\$4,910,796.93	\$(4,670,913.73)
2030 (Year 7)	\$224,189.91	\$4,589,529.84	\$(4,365,339.93)
Total Over 7-Year Period	\$2,300,144.18	\$47,087,670.03	\$(44,787,525.84)

From a net present value standpoint, none of these courses of action are favorable. Ideally, a favorable course of action would have a net present value that is greater than 0. In this situation it is not feasible to discard all of the COAs. One COA has to be selected to facilitate the conduct of a SLTE to ensure a MLR is trained and assessed prior to deployment.

H. STEP 8: SENSITIVITY ANALYSIS

The sensitivity analysis of a CBA is a tool designed to analyze the uncertainties in the values and variables that are calculated throughout the CBA process (Boardman, Greenberg, Vining, and Weimer, 2018, p. 15). For this CBA, a discount rate of seven percent was used to calculate the net present value of each COA. Given this rate the first COA yielded a NPV of \$(71.8) million on a future benefit value and costs of \$95.6 million over a seven-year period; the second COA yielded a NPV of \$(15.4) million on a future benefit value and costs of \$25.1 million over a seven-year period; and the third COA yielded a NPV of \$(44.7) million on a future benefit value and costs of \$61.8 million over a seven-year period. The current state of the economy in the wake of the COVID-19 pandemic can lend an opinion that there is uncertainty in the future of the discount rate.

With that said, this sensitivity analysis will re-calculate the NPV of each COA using a rate of five percent. For the “Status Quo” course of action, there is a \$4.4 million increase in the total amount that needs to be budgeted and allocated for today, to cover the future costs of \$95.6 million needed to support this COA. Table 16 provides an illustration of the yearly NPV for a discount rate of both seven percent and five percent. Also shown in Table 16 is the total NPV over a seven-year period.

Table 16. “Status Quo” Course of Action Sensitivity Analysis

Fiscal Year	Net Present Value NPV at 7%	Net Present Value NPV at 5%
2023 (Year 0)	\$(11,240,000.00)	\$(11,240,000.00)
2024 (Year 1)	\$(10,504,672.90)	\$(10,704,761.90)
2025 (Year 2)	\$(9,817,451.31)	\$(10,195,011.34)
2026 (Year 3)	\$(9,175,188.14)	\$(9,709,534.61)
2027 (Year 4)	\$(8,574,942.18)	\$(9,247,175.82)
2028 (Year 5)	\$(8,013,964.66)	\$(8,806,834.11)
2029 (Year 6)	\$(7,489,686.60)	\$(8,387,461.06)
2030 (Year 7)	\$(6,999,707.10)	\$(7,988,058.15)
Total Over 7-Year Period	\$(71,815,612.87)	\$(76,278,836.99)

For the “Home Station” course of action, there is a \$.9 million increase in the total amount that needs to be budgeted and allocated for today, to cover the future costs of \$25.1 million needed to support this COA. Table 17 provides an illustration of the yearly NPV for a discount rate of both seven percent and five percent. Also shown in Table 17 is the total NPV over a seven-year period.

Table 17. “Home Station” Course of Action Sensitivity Analysis

Fiscal Year	Net Present Value NPV at 7%	Net Present Value NPV at 5%
2023 (Year 0)	\$(2,419,564.00)	\$(2,419,564.00)
2024 (Year 1)	\$(2,261,274.77)	\$(2,304,346.67)
2025 (Year 2)	\$(2,113,340.90)	\$(2,194,615.87)
2026 (Year 3)	\$(1,975,084.96)	\$(2,090,110.36)
2027 (Year 4)	\$(1,845,873.79)	\$(1,990,581.29)
2028 (Year 5)	\$(1,725,115.69)	\$(1,895,791.71)
2029 (Year 6)	\$(1,612,257.66)	\$(1,805,515.91)
2030 (Year 7)	\$(1,506,782.86)	\$(1,719,538.96)
Total Over 7-Year Period	\$(15,459,294.62)	\$(16,420,064.76)

For the “HYBRID” course of action, there is a \$2.7 million increase in the total amount that needs to be budgeted and allocated for today, to cover the future costs of \$61.8 million needed to support this COA. Table 18 provides an illustration of the yearly NPV for a discount rate of both seven percent and five percent. Also shown in Table 18 is the total NPV over a seven-year period.

Table 18. “HYBRID” Course of Action Sensitivity Analysis

Fiscal Year	Net Present Value NPV at 7%	Net Present Value NPV at 5%
2023 (Year 0)	\$(7,009,782.00)	\$(7,009,782.00)
2024 (Year 1)	\$(6,551,198.13)	\$(6,675,982.86)
2025 (Year 2)	\$(6,122,615.08)	\$(6,358,078.91)
2026 (Year 3)	\$(5,722,070.16)	\$(6,055,313.25)
2027 (Year 4)	\$(5,347,729.13)	\$(5,766,965.00)
2028 (Year 5)	\$(4,997,877.69)	\$(5,492,347.62)
2029 (Year 6)	\$(4,670,913.73)	\$(5,230,807.26)
2030 (Year 7)	\$(4,365,339.93)	\$(4,981,721.20)
Total Over 7-Year Period	\$(44,787,525.84)	\$(47,570,998.09)

Just like the NPV results calculated in step 7, the results calculated in the sensitivity analysis yielded a dollar amount that was less than zero. In an ideal situation a COA with a NPV greater than zero would be selected. However, this situation requires that a selection be made to facilitate training. As expected, a decrease in the discount rate from seven percent to five, resulted in an increase in the total dollar amount needed today to cover the future benefits and costs associated with each COA. The largest increase was in the “Status Quo” COA, with a \$4.4 million increase in the NPV and the smallest increase was in the “Home Station” COA, with a \$.9 million increase in the NPV. Thus, making the “Home Station” COA the ideal course of action to pursue from an overall NPV standpoint and sensitivity analysis standpoint.

I. STEP 9: RECOMMENDATIONS

1. Course of Action #1: The Status Quo

There is no argument to be made about the fact that the location of MCAGCC and the total amount of training area available, provides Marine Corps units with one of the best venues for live and non-live fire combined arms training. There are no other bases or training area owned by the Marine Corps that can facilitate the integration of small arms, rockets, artillery, aviation ordnance, and explosives like MCGACC. These attributes make the “Status Quo” course of action an appealing course of action. However, this course of action is the most costly COA and does not provide the ideal training location for MLR units. In a period of fiscal austerity in the wake of a worldwide pandemic, and a National Defense strategy that calls for the Department of Defense to “refine its business practices to find more affordable ways to be mission capable,” this course of action is not ideal (Secretary of Defense, 2018, p. 5).

This course of action has the MLR conducting an assessed SLTE in a desert environment vice an environment similar to that in which it will deploy. In doing so, the “Status Quo” course of action does not fully meet the Commandant of the Marine Corps’ intent of providing “training and education to give leaders the necessary ‘reps and sets’ in realistic combat decision- making” (CMC, 2019, p. 19). Moreover, the current MWX model and location is not aligned with the METL for an MLR. Of thirty-two Mission Essential Tasks (METs) for the MLR, twelve are inarguably maritime based (see Figure 3). The first three METs are “Conduct Expeditionary Advanced Base Operations,” “Support Maritime Domain Awareness,” and “Support Surface Warfare” (see Figure 3). The testing and evaluating these METs in at MCAGCC does not provide a quality comparison to the complexity of conducting these tasks in a Maritime environment as part of a naval expeditionary force. Moreover, many of the other performance standards conducted at MWX are not directly aligned with what is expected of a MLR in support of naval expeditionary operations. These factors led to this course of action being ranked 3 of 3.

2. Course of Action #2: Home Station

The tentative mission for a MLR is to, “maneuver and persist inside a contested maritime environment and conduct sea denial operations as part of the naval expeditionary force in order to enable Fleet operations.” (DC DC&I, 2021b, p. A-1). To successfully execute this mission, it is imperative that the MLR conducts adequate training and is assessed in all of the mission essential tasks prior to a deployment. Moreover, to increase the chances of mission success the training and assessment should be conducted in an environment similar to the environment in which the MLR will deploy and support naval expeditionary operations. This course of action will reduce the MLR’s ability to conduct live-fire training and integrate some of the artillery, aviation ordnance, and explosives that would be employed at MCGACC. However, conducting an SLTE aboard the Hawaiian Island of Oahu or the surrounding island increases the ability to assess the MLR in all of the mission essential task, conduct training in an environment similar to the environment that will be encountered during a deployment in the USINDOPACOM region, and reduce overall costs associated with conducting a SLTE for an MLR. Of the three courses of action, the “Home Station” course of action yields the lowest costs and provides the MLR with a training venue that is ideal for the tasks that it is expected to perform in support of naval expeditionary operations.

This reduction in costs would assist in meeting the intent of a National Defense strategy that calls for the Department of Defense to “refine its business practices to find more affordable ways to be mission capable,” this course of action is not ideal (Secretary of Defense, 2018, p. 5). In addition to assisting in meeting the intent of the 2018 National Defense Strategy, this course of action assists the USINDOPACOM Commander with having forces geographically located in the region that are ready to response to a crisis; “all military personnel stationed in or assigned to the region must be Ready to Fight and Win” (Davidson, 2019, p. 12). This moto is essential to USINDOPACOM’s ability to provide security in the Region. However, available, and well-trained maritime component forces are essential to the execution joints forms of maneuver such as EABO and LOCE. These two maritime concepts assist in facilitating the execution of one of the three focus areas outlined by Admiral Davidson in the 2019 testimony; this focus area being “Focus Area 2:

Enhance Design and Posture” (Davidson, 2019, p. 13). Moreover, the execution of these concepts demonstrates the ability to rapidly buildup combat power and assets in the INDOPACOM region, which is a viable option to serve as a deterrence against Chinese aggression in the region. Lastly, this COA meets the Commandant of the Marine Corps’ intent of providing “training and education to give leaders the necessary ‘reps and sets’ in realistic combat decision- making” (CMC, 2019, p. 19). These factors led to this course of action being ranked 1 of 3.

3. Course of Action #3: Hybrid

This COA possesses some of the pros and cons from the previous two courses of action. However, the two factors within this COA that require further analysis and refinement are first; the additional costs associated with flying a cadre of ‘coyotes’ from TTECG to Hawaii to evaluate the home station training. There is no historical data present for this course of action and was a limitation for this project. Second, are the costs associated with conducting the training at both locations. The dollar amounts used to determine the overall costs to conduct this COA over a 7-year period were derived from an estimated 15-days of training at each location.

While the costs in this course of action are higher than in the “Home Station” course of action; the “HYBRID” course of action does provide the MLR with an opportunity to conduct a portion of the SLTE in a favorable environment. Moreover, this course of action does partial meet the intent of a National Defense strategy that calls for the Department of Defense to “refine its business practices to find more affordable ways to be mission capable,” this course of action is not ideal (Secretary of Defense, 2018, p. 5). Lastly this COA, partially meets the intent of the Commandant of the Marine Corps’ intent of providing “training and education to give leaders the necessary ‘reps and sets’ in realistic combat decision- making” (CMC, 2019, p. 19). These factors led to this course of action being ranked 2 of 3.

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V. CONCLUSION

A. DETERMINATIONS

1. Limitations

The main limitations in this project were, limited knowledge on the assessment of a MLR in the assigned METs, historical data on the daily costs of training a Marine throughout a pre-deployment training plan, the costs associated with conducting a SLTE in the Hawaiian Islands, and the inability to monetize the value of training in the different locations. A portion of the qualitative analysis in this project sought to analyze the Marine Corps' primary service level training exercise conducted at MCAGCC in Twenty-Nine Palms, California. A review of the Marine Air Ground Task Force Warfighting Exercise, commonly referred to as MXW, was conducted to identify whether or not the current MWX design adequately trains and evaluates a MLR for deployment, along with identifying an ideal location to conduct this training; should it be determined that MCAGCC in Twenty-Nine Palms was not ideal.

To analyze the current model and design of the MWX, pre-deployment SLTE, the primary source of information was the MWX after-action reviews. The after-action review points for the assessment of a MLR in the assigned METs was limited. Moreover, the after-action review points and recommendations provided were predominantly for units that did not fall under the mission set and mission essential task requirements of a MLR. To conduct more thorough analysis and to provide a better recommendation on what the overall design of an SLTE should be for a MLR, there needs to be more information gathered on a MLR's performance in the assigned METs; preferably in a location that facilitates the execution of all METs in a manner that would be conduct in an actual naval expeditionary operation. Changes to the status quo often provokes a concern that the changes will automatically lead to an increase in currents costs.

This analysis shows that the effect was actually the opposite of what is often expected. The two alternate courses of action for the location of a SLTE for a MLR yield lower future benefit values as well as future training costs. However, there are some cost-

training tradeoff values that need to be taken into consideration. Moreover, there were some limitations to calculating future costs due to the lack of present-day data for some of the factors that were calculated. For example, when monetizing the impacts for each course of action in step 5, the costs associated with the daily cost of training a Marine was taken from a cost benefit analysis conducted by the Center for Naval Analyses in 2004 regarding daily costs for different military occupational specialties. Given inflation rates and costs for essential training equipment this cost is likely to have increased over an 18-year period. Moreover, the amount utilized was the cost for an Infantry Marine and did not include other MOSs that would also be factored to the daily costs of training an entire MLR.

Lastly, two of the three courses of action require a MTT comprised of TTECG evaluators to travel from MCAGCC to the Hawaiian Island to evaluate the MLR during a SLTE. Historically the evaluators of TTECG have not traveled to another training venue to evaluate a unit conducting an SLTE. Therefore, currently TTECG does not have a MTT structure outlined that could support such a concept. Having an estimated cost for an MTT comprised of TTECG evaluators to travel to Hawaii or another location in the USINDOPACOM region would be beneficial. Adding this data point as a monetized impact will assist in evaluating the benefit of conducting an SLTE via Home Station or at MCAGCC. Not having this information limited the ability to refine the costs associated with having a MTT travel to Hawaii to evaluate a MLR during a SLTE.

2. Further Research

This research project provided a qualitative and quantitative analysis the regarding the design of the current SLTE and subsequently the ideal location to conduct an SLTE for a MLR as, MCAGCC, in 29 Palms, California is not the ideal location. A part of successfully operating in multiple battle space domains requires the organization to evolve the way it approaches training to remain competitive. The design for the current Service Level Training Exercise (SLTE) is a step in the right direction with regards to evolving training to remain competitive in the future strategic environment. However, there should be further research conducted on the level of participation needed from the U.S. Navy to

ensure that the MLR is adequately trained and evaluated on all mission essential task that will be performed in support of naval expeditionary operations.

This research project did not analyze the means in which the Navy and Marine Corps will conduct naval expeditionary operations in the USINDOPACOM region. Nor did this project analyze the resources, planning, and costs associated with conducting a multi-service SLTE with the Navy. Further research into conducting a multi-service SLTE with the Navy, similar to what a MEU does prior to deployment can provide some useful data points and results. Additionally, research into a multi-service SLTE could lead to the discovery of additional locations to conduct a SLTE for a MLR.

This research project did not analyze additional locations to conduct a SLTE. This project was reduced too analyzing two locations largely due to the limited amount of information available to recommend an additional location. Moreover, the lack of information regarding other possible locations would lead to speculative costs data being used to conduct a cost benefit analysis on these locations.

B. SUMMARY

To date the Marine Corps and Navy have made minimal progress in evolving the way they approach training for Marine littoral units in support of naval operations. Without an asserted effort to evolve training and become a more cohesive naval force, the Navy and Marine Corps team cannot remain competitive in the future strategic environment nor the United States Indo-Pacific (USINDOPACOM) area of responsibility (AOR). Specifically, to be competitive and adaptable in the USINDOPACOM AOR. Adequately preparing for the future strategic environment requires the Marine Corps to mature as a learning organization (Headquarters United States Marine Corps, 2020a, p. 1-3). Being a learning organization decreases the likelihood of experiencing an issue or problem where there is absolutely zero knowledge of the problem at hand, thus making the Marine Corps a more adaptive and competitive organization (Mullen III, 2019, p. WE21). A part of being competitive and adaptable is, evolving training for Marine littoral units. Evolving training for Marine littoral units ensures that they are training in an environment that replicates the environment in which the unit is expected to fight and being evaluated on the mission

essential tasks that are expected. Tough, realistic training is a traditional Marine Corps goal. In previous epochs of Marine innovation, the service tested new equipment and methods in the environments it is expected to fight. To test and evaluate its new advanced based defense doctrine in the early 1900s, the Marine Corps dispatched Marines and equipment to Culebra Island in the Caribbean; to validate amphibious warfare doctrine in the 1920s, the Marine Corps conducted training landings in Panama, Cuba, Culebra Island, and Cape Cod, Massachusetts (Millett, 1991). These exercises—all more than a century ago—are examples of the Marine Corps recognizing that the best method to transfer learning requires the highest fidelity experience for the learners (Stolovitch & Keeps, 2011). For a service level exercise like MWX, high fidelity learning is necessary from the individual private to the General officer. To achieve this, the Marine Corps must leave the desert for the sea. This will assist in building organizational intelligence and display the hallmarks of a learning organization.

Authors such as Levitt, March, and Levinthal have proven that there is some correlation between learning organizations and organizational intelligence. Learning organizations are those that conduct detailed assessments of the current state of affairs and appropriately apply the changes necessary to remain competitive and victorious in their respective areas of expertise (Levitt & March, 1998, p. 321). The second of three characteristics of an organization with a high level of intelligence, explained by Levinthal and March, is an organization that explores ways to improve or “engages in exploration—the pursuit of new knowledge, of things that might come to be known and the development of things already known” (Levinthal and March, 1993, p. 105).

Recent changes by the current Commandant of the Marine Corps leads the public to believe that the Marine Corps has a newfound focus to establish itself as a learning and competing organization, with lifelong learners at the helm to ensure a successful transition into the future strategic environment. However, to do so the organization must take risks. “Steady state operations,” continuing to train, progress, and fight as if the organization was still a part of the industrial age will not work in preparation for the future. In the book *Leading Change*, John Kotter argues that successful organizations are those organizations that possess key habits of a lifelong learner (Kotter, 2012). Two of the habits that he states

are the willingness to take risks for the betterment of the organization and working outside of an individual's comfort zone: "Lifelong learners take risks - much more than others, these individuals push themselves outside of their comfort zone and try new ideas. While most of us become set in their ways, they keep experimenting" (Kotter, 2012). While the Marine Corps has taken risks in overall force design and institutional focus. The level of risk taken in the design and location of what is arguably the most important training exercise prior to a Marine Littoral Regiment's deployment does not match the operational focus of the institution, nor does it match the strategic focus set by the 2019 National Defense Strategy.

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