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MASTER OF MILITARY STUDIES

**TRAINING FOR SUCCESS: THE NEED FOR AN LOGISITCS COMBAT
ELEMENT TRAINING AND EDUCATION CENTER OF EXCELLENCE**

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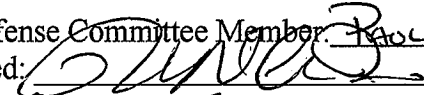
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List of Acronyms

ACE - Aviation Combat Element	MCCSSS - Marine Corps Combat Service Support Schools
C2 - Command and Control	MCP - Marine Corps Planning Process
CLS - Career Level School	MCTOG - Marine Corps Tactics and Operations Group
CRP - Combat Readiness Percentage	MCU - Marine Corps University
COC - Combat Operations Center	MET - Mission Essential Task
CSS - Combat Service Support	MOS - Military Occupational Specialty
DC I&L - Deputy Commandant for Installations and Logistics	MSTP - MAGTF Staff Training Program
DC A - Deputy Commandant for Aviation	OFEC - Occupational Field Expansion Course
ESD - Exercise Support Division	OTI - Operations and Tactics Instructor
EWS - Expeditionary Warfare School	OTTP - Operations and Tactics Training Program
FINEX - Final Exercise	PME - Professional Military Education
GCE - Ground Combat Element	SOML - School of MAGTF Logistics
HQMC - Headquarters Marine Corps	SOTG - Special Operations and Tactics Group
ILS - Intermediate Level School	T&E - Training and Education
LCE - Logistics Combat Element	T&R - Training and Readiness
LCE TECOE - Logistics Combat Element Training and Education Center of Excellence	TECOE - Training and Education Center of Excellence
LTOG - Logistics Training and Operations Course	TECOM - Training and Education Command
LOG-OTIC - Logistics Operations and Tactics Instructor Course	TTECG - Tactical Training Exercise Control Group
LOTI - Logistics Operations and Tactics Instructor	TTPs - Tactics, Techniques and Procedures
LOTI - Logistics Operations and Tactics Instructor	UTM - Unit Training Management
MAGTF - Marine Air Ground Task Force	WTI - Weapons and Tactics Instructor
MAWTS - Marine Aviation Weapons and Tactics Squadron	WTTP - Weapons and Tactics Training Program
MCB - Marine Corps Base	
MCCDC - Marine Corps Combat Development Command	

Executive Summary

Title: Training for Success: The Need for an Logistics Combat Element Training and Education Center of Excellence

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Thesis: This paper argues that the Marine Corps must establish a Logistics Training and Education Center of Excellence (LCE TECOE) in order to continue to sustain the operational efficiency of the LCE. This LCE TECOE should use the best aspects of the ACE and GCE TECOE models, combined with new and existing concepts, to produce an organization that is efficient, responsive and tailored to the LCE's training and education requirements.

Discussion: A LCE TECOE must be established because the current logistics training and education consortium is not organized or responsible for meeting the LCE's needs. The current consortium is characterized by an informal network of training and education institutions that are not focused specifically on the LCE. A recent TECOM study and independent research indicates that the ineffectiveness of this network is creating significant training and education gaps. These gaps include shortfalls in command and control, combat operations center training, unit training management, operational decision making, unit level training and evaluation, MAGTF sustainment planning, joint and MAGTF level integration. These gaps, left untreated, will ultimately degrade the LCE's ability to support to the MAGTF in combat. This paper argues that a functional LCE TECOE may remedy this situation. A functional TECOE is an organization responsible for sustaining the training and education continuum of a particular function. More importantly, functional TECOEs are chartered by HQMC to produce training and education solutions. Thus by creating a functional LCE TECOE, the Marine Corps would have an agency responsible for mitigating the LCE's training and education gaps. Other MAGTF elements successfully in employ functional TECOEs. However, the lack of logistics training standards and the non-standardized career track of most officers in the LCE will make direct application of these models challenging. Instead, the Marine Corps could use the best aspects of these models, combined with new concepts to formulate an effective and efficient LCE TECOE.

Conclusion: Creating a suitable LCE TECOE entails using TECOM's LTOG concept and beneficial applications from other models, all backed by an aggressive manpower strategy. These beneficial applications consists of; a building block approach to training, a training standards review process, an Operational Forces Support Program and integration with the MAGTF Training Center at 29 Palms, CA. By merging these beneficial applications with the LTOG concept, and through close coordination with Manpower & Reserve Affairs, the Marine Corps can create a LCE TECOE that maximizes existing resources and meets the LCE's training and education needs.

Introduction.

The modern battlefield is constantly changing. New technology and tactics require continuous adaption by our Marine Corps learning institutions. Training and Education Centers of Excellence (TECOEs) are a vital component in that process. TECOEs are institutions officially chartered to work with the operating forces to produce timely and relevant training and education solutions to new battlefield requirements.¹ The Commandant of the Marine Corps re-emphasized the importance of TECOEs. He directed that "we continue to develop centers of excellence and formalized training for our ground forces as they increasingly prepare Marines to conduct independent operations at the lower echelons of command".² As clearly stated by the Commandant, TECOEs will play a vital part in preparing our Marines for the demands of the modern battlefield. Unfortunately, this concept is not consistent when applied to the Marine Corps' principal fighting formation, the Marine Air Ground Task Force (MAGTF).

Every major subordinate element³ in the MAGTF employs a functional TECOE except the Logistics Combat Element.⁴ The Aviation Combat Element (ACE) uses Marine Aviation Weapons and Tactics Squadron - 1 (MAWTS-1). The Ground Combat Element (GCE) uses Marine Corps Tactics and Operations Group (MCTOG). Yet the Logistics Combat Element (LCE) does not utilize a functional TECOE. Instead the LCE relies upon an adhoc consortium of schools to meet their training and education requirements. Not originally intended for this role, this consortium is lately proving incapable of meeting the LCE's growing requirements.

Research recently identified several significant training and education gaps in preparing LCEs for combat. One of these gaps was as basic as combat operations center training. This type of gap would be unthinkable in the GCE or ACE, yet it exists in the LCE. Training and Education Command (TECOM), as the process owner for training⁵, is leaning forward with a

solution, but more needs to be done. The Marine Corps must comprehensively address the LCE's training and education gaps before they manifest catastrophically on the battlefield.

This paper argues that the Marine Corps must establish a Logistics Combat Element Training and Education Center of Excellence (LCE TECOE) in order to continue to sustain the operational efficiency of the LCE. This LCE TECOE should use the best aspects of the ACE and GCE TECOE models, combined with new and existing concepts, to produce an organization that is efficient, effective and tailored to the LCE's training and education needs.

The proposal for a LCE TECOE is divided into four sections. The first section will analyze the current logistics training and education consortium to demonstrate the need for a functional TECOE. The second section will analyze MAWTS-1 and MCTOG to derive aspects applicable towards an LCE TECOE. The third section will discuss general recommendations and implementation strategies for an LCE TECOE. The final section will conclude the LCE TECOE argument.

What's Wrong?

The Problem - The Current Status of LCE Training and Education

The current logistics training and education consortium⁶ is not able to support LCE requirements because they are not organized or tasked to perform this mission. The current network consists of Marine Corps University (MCU), The School of MAGTF logistics, MAGTF training programs and military occupational specialty (MOS) schools. Together these institutions train and educate Marines serving within the LCE. In September 2008, TECOM conducted a conference with LCE Commanders to discuss the current consortium. The conference along with independent research identified multiple gaps in LCE training and education. The most significant gaps are as follows:

- Operational logistics decision making⁷
- Planning LCE Command and Control (C2)⁸
- Establishing Combat Operations Centers (COC) operations⁹
- Proficiency in Unit Training Management (UTM)¹⁰
- Joint theater logistics integration¹¹
- MAGTF and Command Element (CE) integration¹²
- Understanding MAGTF sustainment¹³
- Collective LCE Training and Evaluation¹⁴

Appendix A, Figure 1 compares these gaps against the capabilities of the logistics training and education consortium. Capabilities were determined by reviewing each institutions curriculum. The "X" in Figure 1 indicates institutions satisfying gaps based on their curriculum. As illustrated, no institution is singly responsible for meeting the identified gaps. Each institution has a piece of the problem but no institution is responsible for the entire solution. Additionally, review of the institution's mission statements reveal that none of them posses the formal authority to synchronize, validate or provide LCE training and education solutions. Marine Corps Combat Service Support Schools (MCSSS) charter comes close by addressing logistics operations; however their mission statement and task organization are oriented towards the entire logistics function vice the Logistics Combat Element.¹⁵ If no school is responsible for supporting the LCE, how can the Marine Corps expect a Marine to function within the LCE, let alone operate a LCE COC? Support to the MAGTF will undoubtedly suffer as a result of inefficiencies with the LCE. These gaps deserve immediate attention.

A Solution - Functional Training and Education Centers of Excellence

A functional TECOE can address LCE training and education gaps, and prevent future issues. A functional TECOE, by definition, is an organization formally chartered to create, maintain, sustain and synchronize a training and education continuum for a particular function.¹⁶ Functional TECOEs do this by working with the operating forces and other organizations to implement solutions for training and education requirements resulting from new technology,

capabilities, or doctrine.¹⁷ Thus by formally assigning responsibility for meeting LCE training and education gaps, the Marine Corps could bridge the gaps identified in Figure 1, better synchronize the current logistics T&E consortium and establish a process to respond to new LCE training and education requirements. In other words, a functional LCE TECOE would ensure that there is no question on who is responsible for fixing all LCE training and education gaps. This approach is more effective than the current logistics T&E consortium. TECOM also realizes the necessity for an LCE TECOE and is leaning forward in this endeavor.

The most promising concept being proposed by TECOM is the Logistics Training and Operations Group (LTOG). LTOG would provide standardized advance training in MAGTF operations, C2, fire support coordination, and unit training management and readiness at the various LCE levels. Additionally, LTOG will synchronize all LCE related combat development initiatives in order to enhance combat preparation and performance of LCE units in MAGTF operations.¹⁸ LTOG would accomplish this mission through the Logistics Operations and Tactics Instructor Course (LOG-OTIC).

The proposed LOG-OTIC would train key billet holders in the skills necessary to properly prepare and employ the LCE in major combat operations. The LOG-OTIC would target LCE operations officers / chiefs, CLB Executive Officers, GCE and ACE logistics officers / chiefs and other designated billets (Inspector-Instructors, Joint staff members, school instructors). These key billet holders would learn a curriculum focused on unit training management, logistics C2, MAGTF operations and combined arms. LOG-OTIC graduates would then return to their units as Logistics Operations and Tactics Instructors (LOTIs) and build unit pre-deployment training plans.¹⁹ In addition to the LOG-OTIC, LTOG would also work with logistics advocates to standardize logistics education programs.²⁰ As of March 2009, no

final decision has been made by TECOM regarding LTOG's location or implementation; however the most recent brief indicates that it will be located at Camp Johnson, North Carolina.²¹

LTOG appears to meet the majority of logistics T&E gaps noted in Figure 1, but it does have two major shortfalls in collective training standards that need to be addressed. First, the LTOG concept does not account for that fact that as of March 2009, there are no published LCE collective training standards or mission essential tasks necessary to teach prospective LOTIs.²² A mission essential task (MET) is a collective training task in which an organization must be proficient to accomplish its wartime mission.²³ The Logistics T&R manual chapters addressing METs and collective training standards are blank, claiming they are placeholders for future use.²⁴ It would seem logical that in order for the LOTI to build a unit training plan, they must first have access to those METs.

Secondly, assuming that LTOG could devise collective training standards, it still does not make provisions in evaluating LCEs on those standards. This would seem necessary to address collective training gaps and to ensure LOTIs were successful in building comprehensive unit training programs. Arguably, LTOG could leverage the existing consortium to meet this collective requirement, yet as indicated in Figure 1 and Figure 1-2, a large portion of the LCE remain unevaluated. Tactical Training Exercise Control Group (TTECG) and Special Operations Training Group (SOTG) continue to focus primarily on Combat Logistics Battalions (CLB) and do not train or evaluate Combat Logistics Regiments (CLR) or higher. Since LTOG would not have the means to directly address collective training, and the current consortium is limited in this capability, then there still remains a gap in the LCE collective training requirement. These shortfalls indicate that a more comprehensive solution is needed.

To provide a more comprehensive solution, this paper will analyze two successful functional TECOEs, Marine Aviation Weapons and Tactics Squadron - 1 (MAWTS-1) and Marine Corps Tactics and Operations Group (MCTOG). MAWTS-1 has supported the ACE for 31 years and is widely regarded as the Marine Corps "Top Gun". MCTOG, established in 2007, is equally impressive and growing to become an excellent GCE training platform. However, creating an exact replica of these models is not realistic. While both models should be able to offer insight on capabilities needed to create a successful functional TECOE, they also possess features that limit their direct application. The next section will analyze MAWTS-1 and MCTOG in detail, determine how they sustain the operational efficiency of their respective elements and the limitations in directly applying their models to an LCE TECOE.

Functional TECOEs Applied

ACE TECOE model - Marine Aviation Weapons and Tactics Squadron-1

MAWTS-1 is located in Yuma, Arizona. MAWTS-1's Commanding Officer is a Marine Colonel who reports to the Commanding General (CG) MAGTF Training Center (MAGTF TC), TECOM.²⁵ The significant resources invested into MAWTS-1 indicate the aviation community's high regard for the school and its mission.²⁶ The squadron utilizes 14 buildings and encompasses nearly 100 acres of live fire training area. MAWTS-1's yearly operating budget is 3.8 million dollars and is supported via Headquarters Marine Corps (HQMC) and naval aviation funds.²⁷ MAWTS-1 accounts for 217 personnel encompassing every Marine Corps aviation platform and function. Prospective instructors are screened by the MAWTS-1 staff and the HQMC assignments monitor. MAWTS-1's prestige within the aviation community encourages units to send their best qualified Marines to the school, thereby enhancing the quality of instruction.²⁸

The Marine Aviation Weapons Tactics and Training Program (WTTP) established MAWTS-1 and set the framework for sustaining the operational efficiency of the ACE. The WTTP tasks MAWTS-1 with numerous administrative functions, but clearly states that its primary mission is to provide unit training officers and enlisted instructors to manage unit aviation training programs capable of teaching the 200-400 series training events. The 200-400 series events are advanced training standards within the Aviation Training and Readiness (T&R) manual that are deemed critical to the ACE's wartime mission. MAWTS-1 teaches the 200-400 series events via the Weapons and Tactics Instructor (WTI) course.²⁹

The WTI course is a "train the trainer" program that is seven weeks long, graduates 380 students per year and conducted semi annually at Yuma, AZ. The WTI course uses the building block approach consisting of two phases; ground and flight (see Appendix A, Figure 2). The ground phase is primarily classroom instruction,³⁰ while the flight phase consists of practical application of classroom instruction to include live fire training.³¹ Each phase is divided into three sections; generics, commons and specifics. The generics section incorporates the entire student body and covers the six functions of Marine aviation. The commons section groups platforms together (assault helicopters, fixed wing) to cover instruction specific to that community. The specifics section covers curriculum particular to that MOS, to include building a unit training plan. To maintain relevancy in new tactics supplemental courses such as the MAGTF Air Officer's course are also embedded into the specifics curriculum.³² At the conclusion of each section all students are tested and required to score 80% prior to graduation.

Graduates of WTI are awarded a secondary MOS (xx77) and return back to their parent squadron typically to serve as unit training officers. These unit training officers then utilize or create a unit training plan based on the WTI curriculum and established METs. Execution of a

WTI's training program is then measured via Combat Readiness Percentages (CRPs). CRPs are the percentage of a completed tactical aviation syllabus in which personnel are deemed "proficient". In the aviation T&R manual construct, the ideal training plan achieves certain CRPs in each series event prior to deploying.³³ This process is enforced by the Marine Air Group and Wing Headquarters throughout the ACE, each possessing a WTI in their training sections.³⁴ Simply stated, the employment of WTIs against comprehensive and measurable T&R standards means there is little guesswork on the methodology used to reach full combat proficiency.

MAWTS-1 also works closely with TECOM, Aviation Training Branch and the operating forces to maintain aviation standards and tactics. This process is accomplished through bi-annual conferences held by MAWTS-1. During the conference, the MAWTS-1 staff presents proposed adjustments to aviation T&R standards, doctrine and tactics based on input from the operating forces and new battlefield threats. After the adjustments are agreed upon, MAWTS-1 forwards the adjustments to TECOM's Aviation Training Branch for review. Aviation Training Branch then forwards the standards to HQMC for final approval. Once approved, the standards are then promulgated back to the operating forces and MAWTS-1 for inclusion into the WTI syllabus.³⁵ Through this cyclical process of T&R revisions, WTI courses and unit training plans MAWTS-1 ensures the relevancy of its instruction and sustains the operational efficiency of the ACE.

GCE TECOE model - Marine Corps Tactics and Operations Group

MCTOG is located in 29 Palms, CA. MCTOG's Commanding Officer is a Marine Colonel who leads approximately 60 personnel and reports directly to the CG TECOM.³⁶ MCTOG is newly established and largely derived from the MAWTS-1 model. MCTOG is

currently located in a restricted access facility that consists of two buildings and an outdoor command post area. In 2010, MCTOG is schedule to receive a new multi - million dollar facility. Live fire training for MCTOG is conducted through coordination with the MAGTF Training Center. There is no formal screening process for MCTOG faculty outside of the normal HQMC assignment process. The Deputy Commandant for Plans, Policies and Operations, as the Ground Combat Element advocate ensures the proper resourcing of MCTOG and its conformance with the GCEs Operations and Tactics Training Program (OTTP).³⁷

The OTTP is described in USMC Concepts and Programs 2008, and is intended to provide the framework to prepare GCE units for combat deployments.³⁸ The OTTP tasks MCTOG to train key individuals of the battalion and regimental staff in combined arms operations, enhance GCE-wide unit training programs that support combined arms operations; and assists with the validation of GCE-specific training requirements and deficiencies.³⁹ In performing these tasks under the OTTP, MCTOG possess formal authority to produce individual and collective training programs.

The OTTP framework is similar to the WTP, but it is less prescriptive. Whereas the WTP uses the 200-400 series events as MAWTS-1's boundaries, the OTTP makes no mention of specific training events. The OTTP uses a combination of ground T&R standards, key GCE billets and operational force requirements to define their program. MCTOG executes the OTTP in three tiers; the Operations and Tactics Instructor (OTI) program, the Operational Force Support Program (OFSP) and the institutional support program.

The first tier of the OTTP is the resident OTI course. The OTI course is the centerpiece of the OTTP and designed to provide advanced, focused instruction to key individuals within the GCE battalion and regiment. By attending the course, the key individual is prepared to return to

his unit as an OTI who develops and implements training plans and programs necessary to prepare a GCE unit for combat operations.⁴⁰ Realizing that the GCE does not have T&R standards as rigid as the aviation community, the ground combat arms community identified key billets as the best method to disseminate the core curriculum.

The target audiences for the OTI course are serving or prospective regimental / battalion operations officers, operations chiefs, fires chiefs and Marine gunners (Infantry Weapons Officers).⁴¹ To mitigate concerns over prospective OTIs not possessing the basic qualifications necessary for advance training, the OTTP mandates that nominees must have graduated from an appropriate PME course and is slated to assume a key GCE operations billet. These prerequisite ensure that prospective OTIs possess a fundamental understanding of basic GCE skills required to make advanced training effective and are in a position to best impart the curriculum to their units.⁴²

The OTI curriculum requires students to participate heavily in classroom instruction, field exercises, combined arms training, Marine Corps Planning Process (MCPPE), joint and inter-agency planning. The instruction is six weeks long, encompasses multiple hours and culminates in a capstone Final Exercise (FINEX). The OTI course training standards continue to develop but are published in Navy and Marine Corps Order 3500.36A (OTI T&R manual). The OTI course is also exportable via mobile training team or as part of the OFSP.⁴³ After graduation OTIs are awarded a secondary MOS designation (yet to be determined) and return to serve as their unit's lead planner, operations integrator and unit trainer.⁴⁴ These key positions aid significantly in transmitting standards, doctrine and new TTPs throughout the GCE, and ultimately perpetuates its operational efficiency.

The OFSP is the second tier of the OTTP and is focused on assisting individuals in the accomplishment of unit training requirements at the battalion and regimental level. At the request of the Marine Division G-3, the OFSP trains battalion to regimental staffs to conduct combat operations based on doctrinal publications, unit mission essential tasks and the latest TTPs. Once approved by the Division G-3, GCE units are only required to bring their staffs to 29 Palms for the OFSP. Computers and other planning tools are provided by MCTOG or the MAGTF TC. Recently through integration with the MAGTF Training Center's TTECG, the OFSP was expanded to accommodate multiple GCE battalions.⁴⁵ This increased capability has dramatically improved the range of the OFSP program in meeting unit requirements and attests to the flexibility of the GCE TECOE model.⁴⁶

Institutional support is the third tier of the OTTP and acts as the Marine Corps' "clearing house" for GCE tactics and procedures.⁴⁷ In this tier MCTOG coordinates with TECOM, Marine Corps Combat Development Command (MCCDC), Ground Training Branch and the operating forces to review applicable T&R manuals and doctrine. Once approved, changes to GCE T&R standards and tactics are then promulgated via the OTI and OFSP. This process keeps the OTI and OFSP relevant and provides a forum to validate GCE training and education requirements.

MCTOG's flexible approach across all three tiers illustrates the value of the functional TECOE approach in meeting training and education requirements. It could also be argued that MCTOG or MAWTS-1 can serve as suitable models for an LCE TECOE. In fact there is striking similarity in terminology and structure between MAWTS-1, MCTOG and TECOM's proposed LTOG (i.e. WTI, OTI, LOTI). However, as mentioned earlier an exact replica of MCTOG or MAWTS-1 is not the solution to the LCE's training and education dilemma. The

LCE possess unique considerations that limit direct application of the ACE and GCE TECOE models.

Considerations - The argument against direct application of MAWTS-1 and MCTOG

The ACE and GCE TECOE models cannot be directly applied to an LCE TECOE because their primary methods for communicating standards would be limited within the LCE. MAWTS-1's WTI course uses the "train the trainer" approach tied to established standards as the primary vehicle to convey their curriculum. MCTOG's OTI course uses pre-requisites as a qualifier to impart their standards, doctrine and TTPs. Yet the logistics community possesses neither well defined standards nor a well established career track. These considerations would pose significant obstacles in directly importing the ACE or GCE TECOE models to the LCE.

The MAWTS-1 model is limited in application to an LCE TECOE because it relies heavily on measurable and enforceable T&R standards. Due to the complexity inherent in aviation operations, the aviation T&R manual mandates that certain tasks are certified by a WTI prior to execution. This policy is enforced via WTIs serving throughout the ACE. The aviation community does not want an aircrew performing difficult maneuvers with a multimillion dollar aircraft without possessing the proper certifications. Nor are they likely to deploy a unit if their CRPs are below standard. Logistics T&R standards are not as stringent. There are no mandatory collective training requirements or standards, beyond entry level training, for logistics officers. This criticism is similar to the shortfalls identified in the LTOG concept and reinforces the argument that the "train the trainer" construct may not be as effective in the LCE.

The MCTOG model also has limited applicability to an LCE TECOE. This is primarily due to the non-standard career track of logistics officers. Per the OTI T&R manual, "the OTI graduate returns to his unit and becomes the conduit through which the OTTP facilitates the

advanced and standardized training and preparation of the GCE unit for combat."⁴⁸ Considering the OTTP is not closely tied to T&R standards as the ACE's WTTP, the GCE relies on billet and PME pre-requisites as key criteria for potential OTIs. This is the process through which MCTOG ensures the target audiences (Operations Officers / Operations Chiefs /Infantry Weapons Officers, etc.) are capable of effectively promulgating the OTTP. These pre-requisite requirements are supportable for the GCE due to the relatively standard career track of combat arms officers. The non-standard career track of logisticians within the MAGTF makes these types of pre-requisites difficult to implement.

A logistics officer can serve in any element of the MAGTF and at any rank prior to serving in an LCE operations billet. As a result, the probability is higher in the LCE, than in any other MAGTF element, that a logistics officer did not attend PME, served previously in the LCE or attended advanced MOS training prior to holding a key operations billet. This is compounded by the fact that the current logistics officer training and education continuum has no required advanced MOS training for logistics officers.⁴⁹ In other words, a Marine could potentially become a 0-6 Operations Officer within the LCE and never attend any form of advanced MOS training beyond entry level school.

The counter argument would advocate simply removing the pre-requisites from the MCTOG model to make it more suitable to the LCE. This could be attempted, but the advanced training and education returns would be significantly diminished and not represent the most effective employment of a TECOE. The non-standard career track of logisticians compounded by the lack of required advanced MOS training means that if no pre-requisites were attached, an individual attending a MCTOG based LCE TECOE would spend more time learning basic skills than learning to teach advanced LCE operations (which account for the majority of

LCE T&E gaps). It would seem that a high degree of "knowledge leveling" would be required to ensure Marines were capable of progressing to advanced tasks in the MCTOG model, for which it makes no provisions.

Despite some clear differences, an analysis of the ACE and GCE TECOE models shows numerous applications that may prove beneficial in establishing an LCE TECOE. These aspects combined with new concepts may assist in providing the framework for an LCE TECOE. The next section will discuss these aspects in greater detail and provide other necessary recommendations.

Recommendations - A Framework for an LCE TECOE

The foremost recommendation within this paper is that the Marine Corps immediately establish a functional LCE TECOE. The gaps listed in Table 1 are significant and left untreated will continue to degrade the Logistics Combat Element's ability to support the MAGTF. The ACE and GCE TECOE models each possess beneficial aspects that could apply to an LCE TECOE. These aspects are as follows;

- MAWTS-1's building block approach
- MAWTS-1s standards review process
- MCTOG's Operational Force Support Program
- MCTOG's integration with MAGTF TC at 29 Palms, CA

These aspects can be integrated into a revised LTOG concept and reinforced with an aggressive manpower strategy to produce an LCE TECOE that is more efficient and effective than the existing consortium.

MAWTS-1's building block approach can greatly benefit an LCE TECOE. The building block approach used in the WTI curriculum can serve as an efficient method for meeting individual and collective training requirements in one course. Appendix A Figure 3 is an example of the MAWTS-1 building block approach configured to a notional LCE TECOE core

curriculum. The LCE TECOE building block approach would consist of two phases (ground and field) each with two sections (generics and specifics). The generics ground phase would focus heavily on classroom instruction concentrating on skills necessary for all logisticians serving in operational officer assignments to include the functional areas of Combat Service Support (CSS), operational decision making, joint theater logistics, MCPP, MAGTF integration and CSS C2. More importantly, the generics phase would serve as a "knowledge leveling" tool to mitigate training and education shortfalls created from a non - standard career track. This phase would also set the stage for the specifics phase and related practical exercises.

The specifics ground phase would encompass advanced skills based on MOS T&R manuals, logistics doctrine, best practices and approved TTPs. The goal of this phase would be to provide a bridge between classroom instruction and practical exercise events. The specifics ground phase would conclude in MOS specific MCPP exercises requiring students to act as Battalion/Squadron, Regiment/Group and finally Marine Expeditionary Brigade logistics staff members. At the conclusion of the specifics ground phase, students would prepare for their FINEX. The generic FINEX would consist of a series of evolutions with all students serving as members of an LCE staff. This generic FINEX would also provide a window for students to interact with other TECOE programs (MAWTS-1, MCTOG, etc.) to facilitate MAGTF integration training. After FINEX, students would graduate and return to their units to hold billets designated by their command.

MAWTS-1's standards review process can benefit an LCE TECOE by aiding in maintaining the core curriculum, synchronize other T&E programs affecting the LCE and assist the logistics community in defining its absent logistics T&R standards. The LCE TECOE could adopt a similar process to MAWTS-1 and hold conferences with TECOM and the operating

forces to make adjustments to the core curriculum, logistics T&R standards and other logistics publications. These standards would then be forwarded to HQMC for inclusion into applicable publications. Additionally, by instituting a standards review process, the LCE TECOE could work with other logistics T&E programs (e.g. SOTG, MCU, etc.) to ensure conformity with approved standards and congruency with the latest TTPs. This would ensure universal application of LCE T&R standards throughout the MAGTF. Finally, adoption of the MAWTS-1 standards review process would also clear any ambiguity on logistics T&R standards because all LCE T&E stakeholders would have a forum to deconflict issues.

MCTOG's Operational Force Support Program can benefit an LCE TECOE by assisting in meeting LCE collective training requirements and serving as a platform to evaluate the core curriculum. The LCE version of the OFSP could work with MAGTF Commanders to evaluate entire LCE units. The issue of establishing METs would have to be resolved in order for the OFSP to be fully effective (standards review process could assist in that effort), but once a standard is created, the OFSP could implement an evaluation process to ensure these standards are consistently executed throughout the Marine Corps' Logistics Combat Elements. This would improve the operational efficiency of LCE units and through practical application, assist in promulgating these new standards to individual LCEs. More importantly, by essentially instituting a collective training and evaluation process, the need for certified instructors (WTI, OTI or LOTI) would be eliminated. The LCE OFSP should also retain the flexibility of the MCTOG OFSP model and possess the ability to export its core curriculum via mobile training team. This capability proved valuable in the MCTOG model for units without resident school graduates. However, for the OFSP to be successful it should be located at 29 Palms, CA.

MCTOG's location at 29 Palms, CA facilitates not only unit level training but also improves access to support resources. An LCE TECOE could reap the same benefits. 29 Palms is the Marine Corps premier location for live fire MAGTF training and possesses resources dedicated towards that effort. The MAGTF TC occupies 932 square miles (nearly the size of Rhode Island) and encompasses dozens of live fire ranges to include a motorized convoy, machine gun, small arms and urban assault ranges.⁵⁰ These ranges are more than suitable for the execution of LCE collective training. Further, the austere desert environment (29 Palms is located in the Mojave Desert) requires exercise units to diligently coordinate their C2 and logistics plans in order to be successful.⁵¹ This environment is ideal for an LCE. Further, should the need arise to change climates, the MAGTF TC also controls the Marine Corps Mountain Warfare Training Center at Bridgeport, CA. TTECG could also assist in providing exercise controllers, combined arms subject matter experts and other key exercise resources. For TTECG, this type of assistance would be no different from the support they already provide MCTOG and CLB evaluation events.⁵²

29 Palms is also home to the MAGTF TC Exercise Support Division (ESD). The LCE OFSP could leverage the ESD to reduce exercise support requirements. ESD could provide LCE training sets from their Enhanced Equipment Allowance Pool to assist LCE collective training. Access to equipment resources at the LCE's training location would significantly reduce the burden associated with units traveling from home station to conduct training. In sum, 29 Palms is the best location for LCE collective training, the Marine Corps would be hard pressed to find the same size facility with resources that could support an LCE TECOE.⁵³

In addition to the beneficial applications of the ACE and GCE TECOE models, the LCE TECOE could utilize portions of the new LTOG concept. The LCE TECOE could retain the

target audience and core curriculum envisioned in LTOG, but instead of relying solely on LOTIs to impart new tactics, the LCE TECOE would also leverage the LCE OFSP. LCE operations officers / chiefs, LCE executive officers, GCE and ACE logistics officers / chiefs and other designated billets would still receive training and education vital to LCE combat operations. However, LCE TECOE graduates would then return to their primary duties and work with the LCE OFSP to impart training to their entire unit. Additionally, by embedding the unit training management block into the core curriculum, LCE TECOE graduates will also possess the capability to build train plans as required. This approach is clearly more comprehensive than the previous LTOG concept.

Timely and efficient implementation of an LCE TECOE would also require an aggressive manpower strategy to ensure proper staffing and routing of graduates. People, not concepts will ultimately make this institution viable and enduring. This may require consolidating redundant functions under the LCE TECOE, and working closely with HQMC's Manpower and Reserve Affairs (M&RA) branch to re-allocate personnel. One manpower solution might include moving the staff from The School of MAGTF logistics to the LCE TECOE. SOML's mission is to develop, deliver, and evaluate logistics education for the Marine Corps, and manage the logistics education continuum in order to increase the combat effectiveness of Marine Corps operating forces. Considering the LCE TECOE may overlap with portions of the SOML curriculum, there could be personnel savings in folding or disbanding SOML.⁵⁴

Once the staff is created and the TECOE is operational, graduates should be tracked via a secondary MOS (e.g. 0404) similar to MAWTS-1's WTIs. This would provide visibility to M&RA and HQMC's LCE Advocate to guide the routing of personnel for the LCE TECOE faculty or other key logistics billets. Further, tracking of LCE TECOE graduates will provide a

means to determine whether LCEs possess key personnel prior to combat deployments. These types of manpower solutions are vital and essential to an LCE TECOE implementation strategy.

Establishing an LCE TECOE is possible and necessary. This section offered a series of recommendations that utilized new and existing concepts to form a framework for an LCE TECOE. The Marine Corps, specifically its logisticians must act towards building this institution. Details such as funding, course schedule and class size remain to be resolved. For some Marines these details may serve as an excuse to further delay this concept. However, the LCE cannot wait. The modern battlefield is changing daily. Current and future conflicts demand training and education institutions dedicated to ensure the MAGTF is prepared for combat.

Conclusion

The Marine Corps logistics community needs assistance in preparing its Logistics Combat Elements for the modern battlefield. Evidence indicates that there must be an institution that supports the LCE in preparing for combat. The current consortium is not responsible, nor capable of meeting the LCE requirements. A functional LCE Training and Education Center of Excellence can address this issue. Through a formal process of working with the operating forces and other Marine Corps organizations, an LCE TECOE can help to implement relevant T&E solutions to the LCE's requirements. This is not a new concept.

Other elements of the MAGTF have been successful in meeting their training and education requirements through a functional TECOE approach. Both MAWTS-1 and MCTOG successfully sustain the operational efficiency of their respective MAGTF elements through this model. However an exact replica of the ACE and GCE TECOE models is not feasible. The LCE has unique considerations that limit their direct application. The LCE requires an institution that can compensate for individual shortfalls in advanced training while meeting deficiencies in

collective tasks. These shortfalls are compounded by the fact that the logistics community does not possess tangible advanced training standards or a standardized career track. Yet there are aspects of MAWTS-1 and MCTOG that can aid in building an LCE TECOE.

A LCE TECOE, built on the LTOG concept, can blend the curriculum structure (building block approach) and standards review process from MAWTS-1, with the Operational Force Support Programs from MCTOG to produce an organization capable of targeting individual and collective LCE training and education requirements. MAWTS-1's building block approach, infused with an LCE specific curriculum can address individual gaps bred from a non-standard career track, while MCTOG's OFSP can address collective requirements. These concepts can be maintained under a standards review model that is proven to be highly successful in MAWTS-1. Further, to ensure the solution is efficient as well as effective, the LCE TECOE should be based at 29 Palms, CA to take advantage of existing resources.

Finally, implementation of an LCE TECOE requires an aggressive strategy of coordinating with M&RA to ensure the LCE TECOE is adequately staffed. This may be the biggest obstacle. Obsolete logistics training and education institutions may need to be disbanded in order to free personnel. Key billets elsewhere may go unfilled to staff TECOE faculty. Resources dedicated to other efforts may need to be diverted. These are some of the prices that the logistics community must be willing to pay in order to make an LCE TECOE successful. It would be well worth it.

End Notes

¹U.S. Marine Corps Training and Education Command, *Training and Education Centers of Excellence (TECOE)*. TECOM Order 5420.1 with Change 1 (Washington, DC: U. S. Marine Corps, Feb 10, 2005), 1-2.

²Office of the Commandant of the Marine Corps. *Beyond The Horizon, Posturing Our Corps, The Way Forward*, by General James T. Conway (USMC). (Washington, DC: Headquarters Marine Corps, 2006), 10.

³The MAGTF consists of the Command Element (CE), Ground Combat Element (GCE), Aviation Combat Element (ACE) and Logistics Combat Element (LCE). The latter three classify as major subordinate elements. Each major subordinate element usually consists of a collection of like units. For example, the Ground Combat Element will normally consist of all units originating from the Marine Division, such as infantry, tanks and artillery. Further, there are multiple standing MAGTFs each with their own CE, GCE, ACE and LCE. However, for the purposes of this analysis and ease of discussion, these elements are referred to collectively as one organization. References made to the LCE apply to every LCE in each type of MAGTF, and so forth for the ACE and GCE.

⁴MAWTS-1 is not under a formal charter to serve as the TECOE. However MCO 3500.109 has them performing the ACE TECOE functions for the aviation community. MCTOG just recently established has a GCE TECOE charter pending signature. Mr Joseph Harrison interview with the author March 11, 2009.

⁵Training and Education Command's (TECOM) mission is to develop, coordinate, resource, execute, and evaluate training and education concepts, policies, plans, and programs to ensure Marines are prepared to meet the challenges of present and future operational environments. <https://www.intranet.tecom.usmc.mil/default.aspx> (accessed January 20, 2009).

⁶There is no formal Marine Corps Order that specifies the institutions that make up the LCE training and education process. Therefore the term consortium is used to encompass all LCE training and education institutions and simplify discuss.

⁷This gap means LCE officer do not understand how to plan and construct operational campaign design for logistics. Lieutenant Colonel William Wroten Jr, *Logistics Training and Education Gaps: TECOM Analysis Brief*, September 23 2008.

⁸This gap means LCE officers and SNCO do not understand the art of command and control. More specifically, there is a shortfall in their ability to task organize units into an efficient and integrated C2 architecture that facilitates LCE operations. Ibid.

⁹This gap means LCE officers and SNCOs are unable to operate within an integrated combat operations center. Ibid.

¹⁰Inadequate unit level training is also a recurring theme within the TECOM analysis. This gap was defined as the operations officers' inability to execute a unit training management (UTM) program based on the Marine Corps Systems Approach to Training.¹⁰ UTM serves as the baseline standard for Marine Corps training sections (located within operations sections) to organize unit level training based on established METs and ITS. An operations officer inability to execute UTM could result in a unit being trained towards standards that are not consistent with the Marine Corps assigned mission essential tasks. Ibid.

¹¹The MAGTF frequently interacts with joint partners. Joint operational requirements dominate the majority of war plans. These joint operational requirements include interfacing with joint theater logistics agencies to include the Army Sustainment Command. Despite their largely tactical focus, LCEs will still be required to interact with joint theater logistics agencies as the MAGTFs primary logistics provider. A gap in understanding this capability means that operations officers in their employment of LCEs may not be able to fully exploit the joint theater agencies nor interface correctly with these agencies. This gap may prove to be a major obstacle in the MAGTF receiving timely logistics support. Ibid

¹²This gap means LCE officers and SNCO do not understand how to integrate their planning functions within other elements of the MAGTF and its Command Element. Ibid.

¹³This gap means LCE officers and SNCOs do not understand the systems and processes necessary to provide material support to the MAGTF. Ibid.

¹⁴Collective LCE training is defined by the author as the ability to conduct evaluated, standards based training for the entire LCE. "Marine Logistics Group Organization and Deployment Cycle in support of Operation IRAQI FREEDOM", 30 June 2008, Headquarters, United States Marine Corps, Marine Corps Center for Lessons Learned, Quantico, VA, 55, https://www.mccl.usmc.mil/document_repository/IORs/Marine%20Logistics%20Group%20OIF%20Organization%20and%20Deployment%20Cycle%20v7_0-CDR-4013.pdf (accessed January 20, 2009). Also, Major Randy Pape, USMC, Coyote-4 and Major Tim Roberson MCTOG S-4 interview with author 29 January 2009.

¹⁵The mission of Marine Corps Combat Service Support Schools (MCCSSS) is to conduct formal resident training for officers and enlisted personnel in the occupational fields of Logistics, Motor Transport, Personnel Administration, Supply, Fiscal Accounting and Disbursing, as well as to conduct Instructional Management and Combat Water Survival Swim training. This formal resident training is limited to entry level training and does not include advanced MOS training required to serve collectively as part of a Logistics Combat Element. Their Logistics Training and Education Center of Excellence is manned by four personnel and primarily focuses on coordinating TECOE functions for logistics as a war fighting function vice a specific unit such as the LCE. <http://www.lejeune.usmc.mil/MCCSSS/mission.shtml>, (accessed January 20, 2009). Also, United States Marine Corps, Marine Corps Combat Service Support Schools, *Logistics Training and Education Center of Excellence Brief*, 22 July 2008.

¹⁶U.S. Marine Corps Training and Education Command, *Training and Education Centers of Excellence (TECOE)*. TECOM Order 5420.1 (Washington, DC: U. S. Marine Corps, December 15, 2003), 3.

¹⁷ There are in fact three types of TECOEs, military occupational skill producing, combat skill and functional. For the sake of clarity the term LCE TECOE in this paper refers to a functional TECOEs. All three types of TECOEs have the same definition as published in Training and Education Command Order 5420.1. Ibid.

¹⁸Ibid. Also "Logistics Training and Operations Group Concept Brief." Power Point, Marine Corps Combat Service Support Schools. March 13, 2008.

¹⁹Ibid.

²⁰Ibid.

²¹Ibid.

²²Research did find some core mission essential tasks on TECOMs website, but these were power point briefs on TECOMs website that were not incorporated into any formal document. Ibid. Also, TECOM METL website.

<https://www.intranet.tecom.usmc.mil/hq/divisions/g3/core&20mission%20essential%20task%20lists/forms/allitems.aspx> 9 (accessed January 20, 2009).

²³Headquarters U.S. Marine Corps, *Marine Corps Ground Training and Readiness Program*, MCO P3500.27A. (Washington, DC: U.S. Marine Corps, April 18, 2005), 70. Also TECOM METL website <https://www.intranet.tecom.usmc.mil/hq/divisions/g3/core&20mission%20essential%20task%20lists/forms/allitems.aspx> 9 (accessed January 20, 2009).

²⁴Logistics Training and Readiness Manual MCO 3500.27 pg 2-1 and 2-2.

²⁵MAWTS-1 mission statement obtained from the TECOM website. <https://www.intranet.tecom.usmc.mil/sites/mawts1/default.aspx> (accessed January 20, 2009).

²⁶Captain Robert Walker, USMC, academic operations officer, MAWTS-1 interview with author, January 28 2009.

²⁷HQMC funds are provided via operations and maintenance funding, commonly referred to as green dollars. Headquarters U.S. Marine Corps, *Marine Corps Aviation Weapons and Tactics Training Program*, MCO 3500.109. (Washington, DC: U.S. Marine Corps, January 16, 2007), 2.

²⁸Ibid.

²⁹Headquarters U.S. Marine Corps, *Marine Corps Aviation Weapons and Tactics Training Program*, MCO 3500.109. (Washington, DC: U.S. Marine Corps, January 16, 2007), 1-3.

³⁰Course catalogue obtained from the MAWTS-1 TECOM website. <https://www.intranet.tecom.usmc.mil/sites/mawts1/default.aspx> (accessed January 20, 2009). Also Captain Robert Walker, USMC, MAWTS-1 academic section interview with author January 28, 2009.

³¹Ibid.

³² The supplemental courses include; the senior watch officer's course, low altitude air defense enhancement training, Marine mobile team leader's course, the air officer's course and the ACE battle staff training course. WTI course descriptor and information obtained from the TECOM website. Ibid. Also <https://www.intranet.tecom.usmc.mil/sites/mawts1/WTI/default.aspx> (accessed January 20, 2009).

³³ Combat Readiness Percentages are defined in the Aviation T&R manual. 200 series events requires 75% CRP. 300 series events requires 95% CRP and 400 series events requires 100% to be deemed proficient. Headquarters U.S. Marine Corps, *Aviation Training and Readiness Program Manual*, NAVMC 3500.72A. (Washington, DC: U.S. Marine Corps, December 20, 2005), 2-3, 2-4.

³⁴Figure 1 Enclosure (1) assigns WTI to each unit within an Aviation Combat Element. Further it directs MAW Commanders to utilize WTIs to build and evaluate unit training plans. Marine Corps Order 3500.109 WTTP pg.6.

³⁵Ibid, 5.

³⁶Major Tim Roberson, USMC, interview with author, January 29, 2009.

³⁷Ibid.

³⁸As of March 2009, the OTTP has not been officially signed by CG TECOM. The only official record of the OTTP is in USMC Concepts and Programs 2008. MCTOG is currently executing their training program from this document.

³⁹Ibid. Also, Headquarters Marine Corps. *United States Marine Corps Concepts and Programs 2008*, (Washington, D.C: Headquarters Marine Corps, 2008), 217, http://www.marines.mil/news/publications/Documents/Concepts%20and%20Programs%202008_3.pdf (accessed January 20, 2009).

⁴⁰Ibid.

⁴¹Ibid.

⁴²Ibid.

⁴³Ibid.

⁴⁴*United States Marine Corps Concepts and Programs 2008*, 217.

⁴⁵Major Randy Pape, USMC, Coyote-4 and Major Tim Roberson, USMC MCTOG S-4 interview with author January 29, 2009.

⁴⁶Ibid.

⁴⁷Ibid.

⁴⁸Headquarters Marine Corps. *Operations and Tactics Instructor Training and Readiness Manual*, (Washington, D.C.: Headquarters Marine Corps, 2008), 3-2.

⁴⁹Based on the most recent draft of the Logistics Officer MOS roadmap obtained from <http://www.lejeune.usmc.mil/mccsss/schools/los/los.shtml> (accessed March 3, 2009).

⁵⁰Major Randy Pape, USMC, Coyote-4 and Major Tim Roberson, USMC MCTOG S-4 interview with author January 29, 2009.

⁵¹Mountain, temperate climate or cold weather training can be conducted at the Marine Corps Mountain Warfare Training Center which is also under the MAGTF TC control and located only four hours away.

⁵²Major Randy Pape, USMC, Coyote-4 interview with author January 29, 2009.

⁵³"Marine Logistics Group Organization and Deployment Cycle in support of Operation IRAQI FREEDOM", 15 June 2008, Headquarters, United States Marine Corps, Marine Corps Center for Lessons Learned, Quantico, VA, 5, https://www.mccell.usmc.mil/document_repository/IORs/Marine%20Logistics%20Group%20OIF%20Organization%20and%20Deployment%20Cycle%20v7_0-CDR-4013.pdf (accessed January 20, 2009). Also, Captain Douglas Watts, USMC, interview with Colonel James Gannon, USMC, MLG G-3 March 9, 2008. Also, Major Randy Pape, USMC, Coyote-4 and Major Tim Roberson MCTOG S-4 interview with author 29 January 2009.

⁵⁴SOML website. <https://www.intranet.tecom.usmc.mil/sites/SOML/default.aspx> (accessed January 20, 2009).

Appendix A: Figures

Gap	MCU	SOML	MCCSS	SOTG	TTECG
Operational Decision making	X	X			
C2 Art	X				
Establishing and operate a COC					
UTM					
Joint theater logistics interface and integration	X				
MAGTF and CE Integration in MCPP		X			
MAGTF readiness and sustainment					
Collective LCE Training				X (partial see figure 1-2)	X (partial see figure 1-2)

Figure 1. Training and Education Gap Matrix

Legend

Marine Corps University (MCU). This category includes Expeditionary Warfare School, Combined Captains Career Logistics Course and USMC Command and Staff Colleges. The School of MAGTF Logistics (SOML). This includes Advanced Logistics Officers Course, Tactical Logistics Officers Course, Logistics Technical Education Course and other related programs.

MCCSS- Marine Corps Combat Service Support Schools

SOTG- Special Operations Training Group

TTECG- Tactical Training and Exercise Control Group

Source:

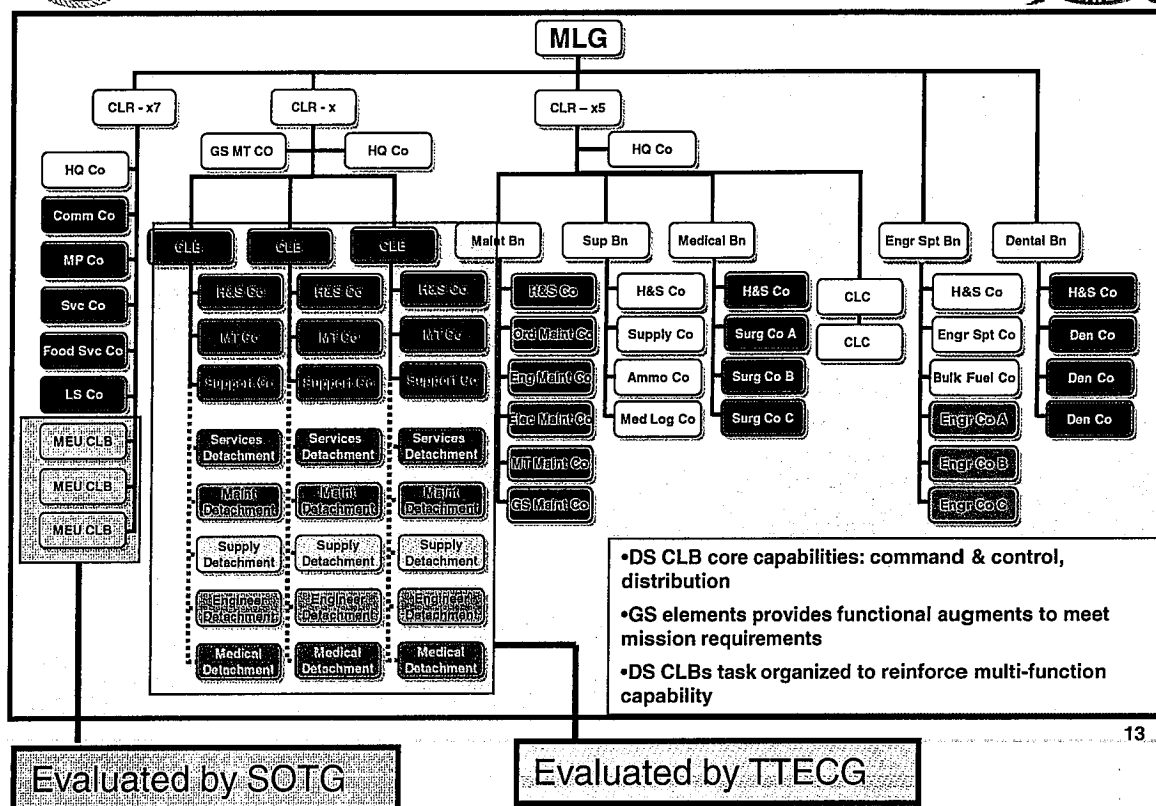
MCU and SOML. <http://www.mcu.usmc.mil/>

MCCSS. <http://www.lejeune.usmc.mil/mccsss/tecoe/tecoe.shtml>

TTECG. <http://www.29palms.usmc.mil/base/TTECG/default.asp>. Also Major Randy Pape interview with author January 29, 2009.



Task Organization of the Direct Support CLB



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Figure 1-2. LCE Collective Training Evaluation Chart

Source: LCE organizational chart derived from United States Marine Corps, Logistics Vision and Strategy Branch (LPV), Installations and Logistics, *Reorganization of the Marine Logistics Group Brief*, February, 2008. Evaluated units portion derived from Major Randy Pape interview with author January 29, 2009.

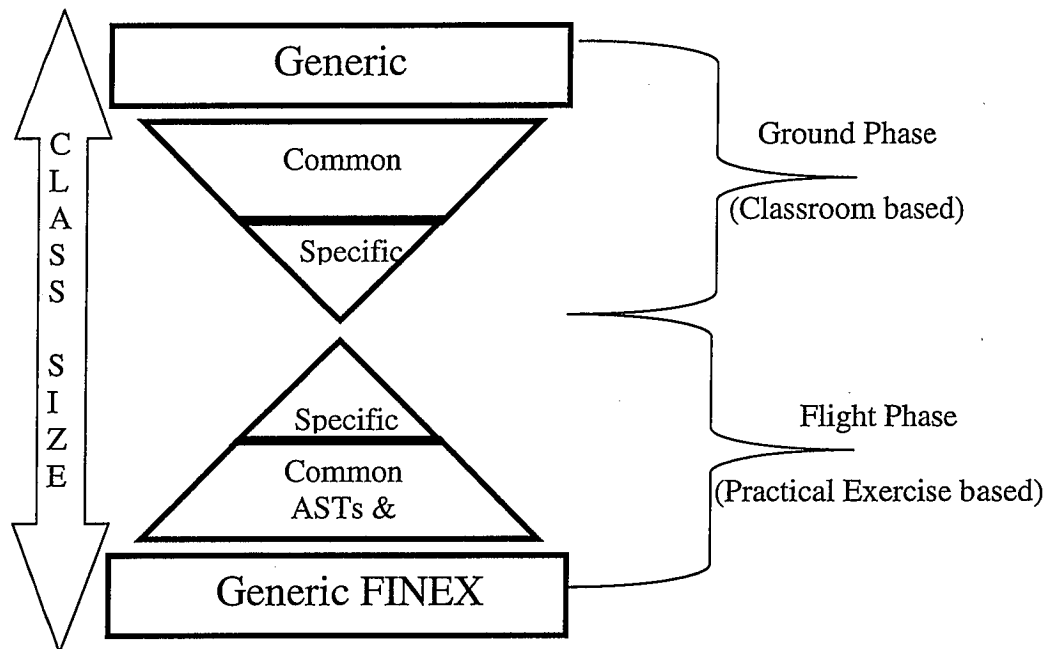


Figure 2. WTI Building Block Approach.

Source: Captain Robert Walker, *MAWTS-1 Welcome Aboard Brief*, date unknown.

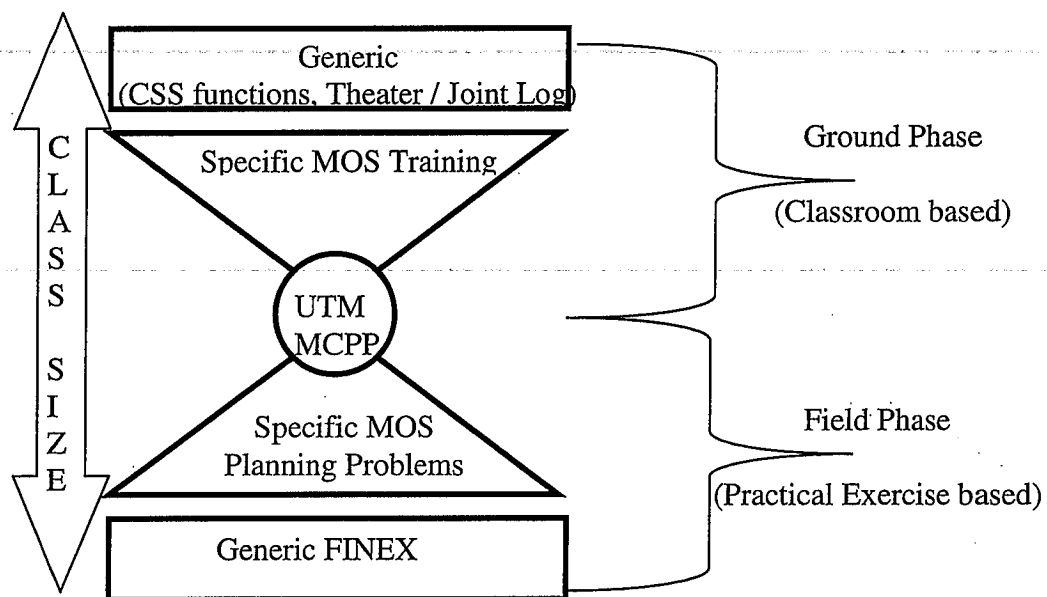


Figure 3. Proposed LCE Center of Excellence with WTI Building Block Approach

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