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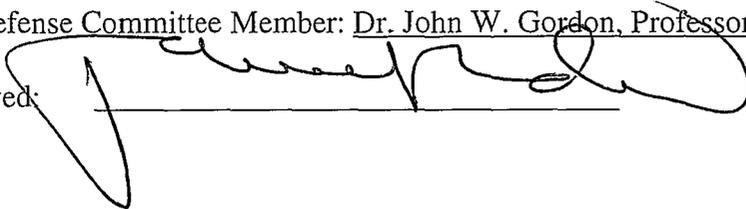


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EXECUTIVE SUMMARY

Title: *Transformation of Marine Corps Artillery in Support of the 2015 Expeditionary Force*

Author: Major Jonathan P. Dunne, United States Marine Corps, Marine Corps Command and Staff College

Thesis: *Significant manpower transformation within the Marine Corps' artillery community is required to support full-spectrum expeditionary operations in the year 2015.*

Discussion:

This study first frames the artillery community's current and future operating environment, defined as the predominant threat models, policy initiatives, and employment practices that define the Transformation process for the artillery community. Based on that defined operating environment, this paper outlines the principal characteristics that the Marine Corps artillery must embody to remain relevant. Specifically, the Marine Corps' versatile artillery must retain its lethal capabilities while further evolving into a multi-purpose community that has the flexibility and efficiency to fulfill the non-lethal requirements of full-spectrum expeditionary operations.

In an effort to meet these non-lethal requirements, three Transformation proposals are examined in detail. First, while the Marine Corps' artillery has recently adopted Civil Military Operations (CMO) as an additional mission; however, this mission and role must be further defined and developed. Next, additive Civil Affairs Activities (CAA) capabilities must be embraced and adopted by the Marine artillery. Finally, it is incumbent upon the Marine artillery to formally adopt specified Information Operations (IO) tasks as tactical responsibilities.

The proposals addressed in this study specifically focus on the manpower, training, and force employment considerations of the artillery force; arguments centered on future technologies and future tactics, techniques, and procedures will not be addressed as part of this examination. Long-term commitment to the three Transformation Proposals, on the part of the artillery and the Marine Corps at-large, will create an artillery community poised with the capability and capacity to effectively support small-unit, full-spectrum expeditionary operations by the year 2015.

Conclusion: The success of the 2015 Expeditionary Force is largely dependent on the artillery community's ability to deliver effective lethal and non-lethal fires along the full range of military operations (ROMO). Current artillery force structure, formal training, and personnel management does not effectively meet this requirement. Institutional changes must be initiated now to properly prepare artillery officers to satisfy the needs of the 2015 Expeditionary Commander.

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PREFACE

This paper is designed to highlight a number of manpower-related modifications that are required within the United States Marine Corps' artillery community to meet the tactical needs of the 2015 Marine Expeditionary Brigade. My interest in this topic stems from my two deployments in support of Operation Iraqi Freedom. The fact that the artillery community has been directed to perform non-doctrinal, or non-traditional, missions is not unique; there are countless operations or contingencies in which the Marine Corps has capitalized on the versatility of artillerymen to serve as provisional infantry units or serve in some other non-artillery specific capacity. However, during the Global War on Terror (GWOT), the Marine artillery has been routinely called upon to fulfill an increasingly diverse, technical, and non-lethal array of missions.

I contend that even after the war in Iraq ends, this trend will continue – artillerymen will be ever more be called upon to fulfill a number of capacities that far exceed the tactical tasks outlined in doctrinal publication related to artillery operations. In an effort to make a positive contribution to the artillery community and the Marine Corps-at-large, I offer this argument as a framework for future artillery community-specific core competencies, corresponding training requirements, and personnel employment and management. Recognizing that expansion of artillery core competencies into the non-lethal realm will require significant time and investment of resources, these concepts are framed in support of the expeditionary forces in the year 2015 and beyond.

The completion of this analysis hinged on the invaluable contributions of a number of generous and skilled professionals. I should first recognize, in chronological order, those artillery officers who have previously served as my battery and battalion commanders: Major

Alvin W. Peterson, USMC (Ret); Lieutenant Colonel Gerald F. Harper, USMC (Ret); Colonel David E. Smith, USMC; Colonel Lyle O. Armel III, USMC; Colonel Douglas H. Fairfield, USMC; and Colonel Mark M. Tull, USMC. All six of these officers not only dedicated themselves to the artillery profession, but also personally invested in my development as an artillery officer – I am forever grateful.

Dr. Donald F. Bittner, Professor of History at the Marine Corps Command and Staff College, served as my mentor for this project. He is largely responsible for keeping me on the right path from the inception of my research until the completion of this thesis. Dr. Patrice Scanlon, Director of the Leadership Communication Skills Center at Marine Corps University, not only provided me with sage technical advice during my research and writing, but also proved to be a positive reinforcement during times when this task seemed a bit too daunting. In support of my academic studies, Dr. Joe Strange, a retired faculty member of the Marine Corps War College, provided me with keen insight regarding problem solving that proved extremely beneficial. Lieutenant Colonel Mary Reinwald, USMC, my faculty advisor at the Command and Staff College, capably applied her trade as a manpower officer and provided a number of leads and resources in support of my research. There are countless artillery officers throughout the Marine Corps, far too many to mention by name, who have not only contributed to this specific research effort, but who have also enriched my life, professionally and personally.

Finally, I would be remiss if I did not acknowledge the contributions of my wife, Kristine. After two long deployments to Iraq prior to my assignment to the Marine Corps Command and Staff College, she graciously allowed me to pursue this important but time-consuming and strictly voluntary study. Like any of my other personal or professional successes,

this undertaking was not possible without Kristine's steady hand, critical eye, and unwavering patience.

INTRODUCTION

Marine artillerymen, deployed globally in support of the Global War on Terror (GWOT), are primarily performing countless “in lieu of” (ILO) missions instead of their doctrinal artillery tasks.¹ These provisional missions include service as infantrymen, convoy security elements, military policemen, detention facility operators, civil military operations centers (CMOCs) and civil affairs units, and information operations cells.² Clearly, the counterinsurgency efforts in Iraq have required a large degree of flexibility and ingenuity by *all* Marines, but current circumstances do highlight a couple of significant questions: In contemporary warfare, what is the focus or perhaps even the relevancy of the Marine artillery? More pointedly, one must ask: What is (are) the future mission(s) of the Marine artillery community? An examination of the current operating environment dictates that today’s artillery community is not structured, trained, or employed to maximize its effectiveness in support of full spectrum operations conducted by expeditionary forces. *This study serves as an examination of the need for continued force structure³ transformation within Marine artillery. This transformation will allow the artillery community to perform lethal as well as non-lethal fires effectively in support of 2015 expeditionary operations.*

CURRENT OPERATING ENVIRONMENT

Within the context of this examination, current operating environment is defined as those influences (internal or external to the Marine Corps) that have or will have a significant and direct impact on the Marine Corps’ artillery community. There are six predominant factors within this operating environment:

- Hybrid Warfare and the Four-Block War Concept
- The Transformation Process
- The Artillery TRIAD

- ALMAR 061/05: “Assignment of Secondary Civil-Military Operations Mission to Artillery Regiments,” December 5, 2005
- CMC Planning Guidance, 2006
- Current OIF/OEF experiences

Threat models and theories regarding hybrid warfare⁴ and the four-block war⁵ (an extension of General Krulak’s three-block war concept⁶) permeate future vision of the Marine Corps and its required capabilities. Based on a combination of conventional, unconventional, and asymmetric threats, Marines in future conflicts will be required to serve not as general-purpose but as a “*multi-purpose force*,” capable of conducting combat operations, humanitarian assistance, tactical diplomacy, and information operations, all within largely confined and culturally-dynamic battlespaces. These assessments have sparked the Department of Defense’s (DOD) Transformation Initiative, which now transcends all military organizations to include the Marine Corps artillery community. Transformation is an acknowledgement and response to counter tomorrow’s perceived threats that require DOD’s “outdated organizational structure[s]...and practices,” and, more specifically, its “role, size, and structure of forces and capabilities,” to be scrutinized for versatility, flexibility, and efficiency.⁷

Two Marine Corps Commandants’ initiatives have further defined the direction of the artillery since the start of the 21st century. During General James L. Jones’ tenure, Marine Corps lethal capabilities were enhanced; the artillery initiated its modernization efforts through its transition from the M198 howitzer to the “Artillery Triad” – the M777 light-weight howitzer, the HIMARS missile and rocket system, and the Expeditionary Fire Support System (EFSS) (see Appendices D, E, and F for specifics regarding these systems).⁸ A few years later, then-Commandant General Michael Hagee released ALMAR 061/05, which assigned each regimental headquarters and each cannon battalion (non-HIMARS battalions) a secondary civil military affairs (CMO) mission.⁹ The over-extended Select Marine Corps Reserve (SMCR) component’s

Civil Affairs Groups (CAGs),¹⁰ whose activation and employment are defined by Title X regulations, struggle to continue their sustained support of the Global War on Terror.¹¹ This ALMAR tasked a capable and versatile artillery force, not decisively engaged in the sustained performance of their primary lethal artillery tactical tasks,¹² to fulfill the critical civil affairs requirement.

Finally, in-line with the threat model and force structure/capabilities initiatives described above, the Commandant's Planning Guidance, released in 2006 by General James T. Conway, looks beyond the Marine Corps's commitment to OIF and OEF (to include the artillery's extended commitment, outlined above). It frames the Corps' future within a "reset (and modernized" MAGTF, capable of operating along the full range of military operations (ROMO). Conway furthers the importance of revamping the Corps' "organizational construct."¹³ Finally, the Commandant emphasized the Corps' need to yet again embrace its expeditionary nature. The Marine Corps must retain its ability to serve the nation's needs for a forward-deployed and diversely trained response force.

Arguably, there are countless other edicts, concepts, and initiatives that directly or indirectly impact the artillery community - both today and tomorrow. Regardless, as outlined above, the Marine Corps artillery community must continue to transform in order to sustain/achieve the following characteristics:

- Marine artillery must **retain** its ability to perform its **doctrinal, tactical, and lethal mission**.¹⁴ Both the hybrid threat model and the four-block war construct acknowledge that threats will continue to exist that require the application of lethal artillery fires.
- Artillery organizations, as a versatile "multi-purpose" force, must further evolve in order to effectively and flexibly **support non-lethal tactical missions** along the **full ROMO Expeditionary Operations**.¹⁵ The current Commandant's Planning Guidance emphasizes that a versatile, flexible, forward-deployed expeditionary force will be the Marine Corps' contribution to defeating these threats.
- Artillerymen embedded within forward-deployed expeditionary forces must develop the ability and agility to provide **lethal and non-lethal capabilities**¹⁶ in support of **small**

unit operations. ALMAR 061/05 and current employment practices of artillerymen in support of the Global War on Terror recognize this fact.

This analysis will propose Marine artillery-specific force structure transformation initiatives necessary to meet the demands of today and tomorrow. Issues regarding manpower, training, and career management will be scrutinized. Matters regarding equipment, doctrine, and tactics, techniques, and procedures (TTPs) will not be examined as part of this study.

FORCE STRUCTURE TRANSFORMATION PROPOSALS

To advance the force structure Transformation process within the Marine Artillery, three separate initiatives are offered:

- **Proposal #1: Advance the artillery's additional mission of CMO.**
- **Proposal #2: Extend the CMO mission to include specified CA activities.**
- **Proposal #3: Engrain limited tactical level IO within the artillery.**

Detailed analysis will demonstrate that not only are these proposals feasible, but their adoption will create unified targeting efforts in support of (a forward-deployed) Expeditionary Forces' full spectrum operations. The three force structure initiatives identified above will be detailed in the following passages. (Of note, Appendix G includes a diagram and accompanying dialogue that outlines the design of this entire artillery transformation argument and its proposals).

Transformation Proposal #1: Advance the Artillery's Additional Mission of CMO

This proposal demands that greater steps must be taken by and for the artillery community to properly address the Civil Military Operations (CMO) needs of the Marine Corps. To start this examination, it is appropriate to refer to doctrine and define CMO and Civil Affairs Activities (CAA):

CMO: The activities of a commander that establish, maintain, influence, or exploit relations between military forces, governmental and non-governmental civilian organizations and authorities, and the civilian populace in a friendly, neutral, or hostile operational area in order to **facilitate military operations**, to consolidate and achieve US

objectives. CMO may include performance by military forces of activities and functions normally the responsibility of the local, regional, or national government.

CAA: Activities performed or supported by civil affairs (designated forces and units organized, trained, and equipped to conduct CAA) that (1) enhance the relationship between military forces and civil authorities in areas where military forces are present; and (2) involve the application of civil affairs in areas normally the responsibility of local civil governments, to **enhance conduct of civil military operations**.¹⁷

The definitions above illustrate that CMO is both a command-and-control action and a synchronization function, performed by higher staffs in support of and in conjunction with larger government organizations. Arguably, CMO serves as an *operational enabler*. Conversely, CAA is performed by designated, properly trained and equipped small-units in support of local governments. CAA is a *tactical weapon*. It is important to highlight the definitional disparity between CMO and CAA prior to examining the first Transformation Proposal, the ALMAR-mandated CMO function.

Recognizing its lack of organic CMO capacity, the Marine Corps released ALMAR 061/05. In accordance with the ALMAR directive, a handful of CAG Marines were assigned to artillery regiments in order to provide deploying artillery battalions with embedded CMO-expertise.¹⁸ Despite this accommodation, and notwithstanding the pre-deployment CMO-training efforts of deploying artillery battalions,¹⁹ there are a number of problems that directly impact the current artillery community's ability to perform CMO. Specifically:

- 1. Negligible Embedded Expertise:** Less than 1 percent of artillery officers (ranks 2ndLt through LtCol) and artillery enlisted Marines are designated as CMO officers by AMOS 0530 and AMOS 0531, respectively.²⁰
- 2. Insufficient Formal Training Opportunities:** Training opportunities through institutional schools are insufficient;²¹ embedded CMO training capabilities within regimental commanders' artillery training schools (ATS) are negligible.²²
- 3. Mission and Command Relationship Complexities:** Artillery headquarters have been tasked to fulfill MEF-level CMO responsibilities in support of OIF (in contradiction to the division-level mandate of the ALMAR). Conflict of responsibilities and relationships between CAG commanders and artillery commanders are not uncommon.²³

To address these current issues, the Marine Corps Combat Development Command (MCCDC) hosted a mid-January 2008 CMO Conference. Attended by 60 Marines, largely of the civil affairs and artillery communities,²⁴ the conference was “convened to establish service-wide consensus for a single and comprehensive approach to CMO, and then use that consensus to synchronize recent initiatives and existing capabilities.”²⁵ The following recommendations resulted from that conference and have been submitted to CG MCCDC and CMC for review:

1. Establishment of an S-9/G-9 Civil Affairs Staff Section (excluding Marine Expeditionary Units or MEUs).
2. CAG Commanding Officers will serve as the CMO coordinator for MEFs and provide augmentation to major subordinate commands (MSCs), as directed.
3. Discontinue cross-mapping of billets from CAG tables of organization to artillery tables of organization, and, in its place, globally source the CMO billets within artillery units.
4. Designate Military Occupational Specialty (MOS) 0531 Civil Affairs as a primary MOS.
5. Establish civil affairs billets as a B-Billet for commissioned officers.
6. Establish a Marine Corps Civil Affairs School by the Security Cooperation Education and Training Center (SCETC).²⁶

The MCCDC Conference produced numerous tangible and productive proposals designed to resolve issues of organic proficiency, training throughput, and command relationships. These developments will enhance the artillery’s CMO *capabilities*. However, these measures fail to address the *capacity* needs of the Marine Corps. The hybrid-warfare model and four-block war concept, along with the current CMC planning guidance, implicitly demand a robust and embedded CMO capability within an expeditionary force. The artillery community, assigned the additional CMO mission per ALMAR 061/05, must take further steps to advance its CMO capabilities and satisfy the Expeditionary Commander’s vital CMO capacity. Three initiatives, requiring further commitment of artillery units’ resources, will largely fill this CMO capacity vacuum:

1. Clearly define and then commit to *specific* CMO mission essential tasks (METs).
2. Commit 0802 artillery officers and focus the MOS 0848 Artillery Operations Chief and its feeder MOSs as the artillery's CMO embedded expertise.
3. Commit organic resources to the artillery regiments' Artillery Training Schools (ATS's) in order to create a standardized, comprehensive, and progressive CMO training program.

In an effort to clearly define specific CMO MET's, the current Mission Essential Task List (METL) and associated sub-tasks assigned to artillery headquarters are listed below. Note that the METL (CMO compared to the doctrinal definition of CMO) is narrowly and inappropriately focused on enabling tasks and not on core competencies:

MCT 5.4.1.5, Conduct Civil Military Operations²⁷

- MCT 1.2.2 Organize Forces
- MCT 4.3 Combat Transportation Operation
- MCT 5 Exercise Command and Control
- MCT 5.1 Acquire, Process, Communicate Info
- MCT 5.1.1 Provide and Maintain Communication
- SC-RE-202 Construct field fortifications and protective structures
- SC-RE-203 Conduct Military Handling Equipment (MHE) Support
- SC-RE-207 Provide Mobile Electric Power (MEP)/refrigeration support
- ITS 0503.03.08 Establish a Civil Military Operations Center (CMOC)
- ITS 0503.03.09 Direct a CMOC

Unlike the tactically-oriented roles outlined above, the nine doctrinal functional areas of CMO, indicated below, constitute the core competencies of CMO.²⁸

- | | | |
|-----------------------|-------------------------------|-------------------------|
| 1. Cultural Relations | 4. Public Works and Utilities | 7. Civil Supply |
| 2. Civil Information | 5. Public Communications | 8. Public Health |
| 3. Public Safety | 6. International Law | 9. Dislocated Civilians |

A comparison between the nine functional areas of CMO and MCT 5.4.1.5 listed above suggests that artillery headquarters must expand the focus of CMO to embrace the nine CMO functional areas. Expanding the artillery's CMO role to fulfill what has been identified as the core functions of CMO is critically important; equally relevant, it is not an unrealistic or unsupportable expectation. For example, during OIF 6.8, II MEF Forward, supported by a reinforced artillery headquarters, was structured to best facilitate CMO functional areas similar to those outlined above.²⁹ Today's and tomorrow's conflicts will require the Marine Corps to

coordinate the nine functional areas of CMO in support of joint operations.³⁰ The Marine Corps' artillery community, in accordance with the ALMAR-mandate, must view its CMO responsibilities holistically. That is, it must modify its METL and search for a means to increase CMO capacity and capabilities required to synchronize the CMO core competencies. (Refer to Appendix H and Appendix I for detailed information regarding current and author-recommended mission statements and mission essential tasks (METs), respectively).

To adopt this proposal, the artillery community will need to intelligently manage its resources. Regimental and battalion-sized artillery headquarters (here after referred to as artillery headquarters) can best prepare and then execute the CMO functional areas by focusing their CMO training and employment efforts within the MOS 0802 artillery officer, the MOS 0848 Operational Chiefs,³¹ and the feeder MOSs for 0848s.³² Artillery officers and operations chiefs routinely conduct artillery operations within a Fire Direction Center (FDC) or provisional missions within a Combat Operations Center (COC). More pointedly, the Artillery Training and Readiness (T&R) Manual outlines the collective tasks of artillery elements³³ and individual performance tasks³⁴ for MOS 0802 and for MOS 0848 and its feeders. Many of these tasks mirror the command-and-control mechanics performed within a Civil Military Operations Center (CMOC). Additionally, Marines who possess MOS 0802 and MOS 0848 and its feeders, in accordance with standards as published in the MOS Manuals, possess the mental capacity required for the expanded CMO-specific training.

As a result of the January 2008 CMO Conference, the Security Cooperation Education and Training Center (SCETC) has been formally tasked to establish a formal CMO school. Artillery headquarters must ensure that future CMO courses are inundated with 0802s, 0848s, and 0848 feeder MOS's. Many of the command-and-control mechanics of artillery operations and CMO are parallel; it is the formal training of CMO-specific applications and techniques that

the artillery community lacks. (Appendix J outlines a modified MOS Roadmap³⁵ for MOS 0848 and its feeders, to include skill training and professional military education required to expand the practical knowledge and skills of 0848s to perform CMO).

Finally, it is incumbent upon the artillery regiments to establish an internal standardized, comprehensive, and progressive CMO training program. Despite the assignment of CMO as an additional mission two-and-a-half years ago, artillery headquarters have been unable to develop a homogeneous, thorough, building-block approach to training. In tangible terms:

- The bulk of artillery battalions have ***not developed*** functional and commonly-understood CMO Standard Operating Procedures.³⁶
- The regimental Artillery Training School (ATS's) have ***not resourced*** organic instructor cadres to conduct progressive and purposeful CMO training.³⁷
- While deploying artillery battalions have conducted training to advance CMO skills,³⁸ non-deploying battalions have, at best, conducted ***isolated CMO orientation classes.***³⁹

Admittedly, artillery headquarters have been stretched thin supporting the requirements of OIF and OEF. Additionally, long-term CMO growth within the artillery community will be stunted until organic efforts are undertaken to develop a focused and progressive training program to advance the community's CMO proficiency. Regimental commanders can largely address this need by employing their ATS's to provide consistent building-block instruction to the regiment's 0802s, 0844s, and 0848s. (The ATS's will require additional CMO subject matter experts; this issue will be addressed later in this paper).

Transformation Proposal #2: Extend the CMO Mission to Include Specified CA Activities

While CMO and CAA were both defined in the previous section, the discussion of civil affairs (CA) requires further clarification. CA is defined as:

*Designated Active and Reserve Component Forces and units organized, trained, and equipped specifically to conduct civil affairs activities and to support civil military operations.*⁴⁰

Currently, this definition is of little consequence to the artillery community; ALMAR 061/05 clearly assigns artillery *headquarters* with a secondary *CMO* mission. By design, it *deliberately* does not designate artillery units as CA units⁴¹ to be organized, trained, and equipped to conduct CAA and support CMO. The artillery *community*, not just artillery *headquarters*, is needed to address the Marine Corps' CMO/CAA needs. This second Transformation proposal recognizes that the Marine Corps requires multi-purpose force-structure⁴² to counter hybrid threats in complex environments. Unfortunately, while Marine Corps artillery currently performs CAA in support of OIF, CA is not clearly established as an ALMAR-mandated additional mission for the artillery.⁴³ This paper contends it should be.

There are three reasons why it is imperative for the artillery to assume a CA role:

1. The CAGs do not possess the capacity to fulfill the Marine Corps' CA needs.⁴⁴ The Marine artillery does.
2. The 202K plus-up plan, while creating additional civil affairs capacity, does not create sufficient embedded, small-unit CA capacity in support of Expeditionary Forces.⁴⁵ The artillery is an embedded and capable component of the Expeditionary Force.
3. The artillery community possesses the force structure and equipment sets that are compatible with CAA.⁴⁶

Closer examination of CA functions demands that while, yes, the artillery community is capable and needed to serve as a CA force, three intra-community commitments must be made to enable CA:

1. Further define and then commit to specific CA mission essential tasks (METs).
2. Commit 0811 cannoneers to become the artillery's trained CA experts.
3. Commit organic resources to the artillery regiments' Artillery Training Schools (ATS's) in order to create a standardized, comprehensive, and progressive CA training.

Discussion regarding expansion into CAA must realistically acknowledge that the artillery can only fulfill specified CA tactical tasks without endangering its ability to continue

performing its doctrinal lethal mission. Artillery units performing in-lieu of (ILO) missions are currently performing five CA-tasks in conjunction with OIF:⁴⁷

1. Security / QRF (Quick Reaction Force)
2. Transportation
3. Convoy operations
4. Engineering
5. Medical assistance

However, with an expanded training program, artillery Marines could be provided technical training (similar to apprenticeship certifications) to *perform a sixth CA-task: establish essential, rudimentary public works and utilities.*⁴⁸ Artillerymen cannot be expected to perform the other doctrinal CA tasks (e.g. cultural relations, civil information, and international law). These advance skills sets require labor-intensive training that would dilute the training and readiness of the artillery in the performance of their primary lethal mission. Such diverse advanced skills require Foreign Area Officers (FAOs), Regional Affairs Officers (RAOs), and Staff Judge Advocates (SJAs), as well as expertise from other government agencies (OGAs), Non-Governmental Offices (NGOs), and private contractors to include engineers and technicians.

The artillery community has hesitated to formally extend its headquarters-centric CMO mission to include unit-level CAA because of concern of over-extending itself beyond its primary tactical mission. However, the Marine Corps, relying upon organic or embedded general purpose forces to fulfill full spectrum operations in support of expeditionary commanders, will continue to rely upon the artillery to perform CAA. Failing to designate units to adequately address the current CA void is detrimental to the conduct of contemporary and future full-spectrum operations. It is time to formally recognize that the artillery can realistically fulfill the six CA tasks identified above.

Similar to the CMO Transformation argument, this second proposal regarding CAA requires a deliberate and focused approach to training and employment. Accordingly, the

artillery community can best prepare its battalions and batteries to perform CA tactical tasks by focusing its internal CA efforts with specific preparatory efforts centered on the 0811 cannoneer MOS. Cannoneers constitute over 50 percent of the enlisted manpower within a firing battery;⁴⁹ with additional specialized training, MOS 0811s could serve as the backbone behind a robust, organic CA unit. In accordance with the January 2008 CMO Conference, SCETC has been charged to establish a formal CMO school.⁵⁰ The artillery community must ensure that SCETC designs complementary CA-skills/apprenticeship-type curriculum, developed for and then populated by 0811s (Appendix J outlines a modified MOS Roadmap for MOS 0811). With the formal expansion of 0811 CA-specific skill sets (within the framework of the six CA tasks outlined above), the existing artillery equipment density lists (EDLs) could be expanded to provide properly trained 0811s with the equipment necessary to perform CAA.

Finally, it is incumbent upon the artillery regiments to establish a standardized, comprehensive, and progressive CA training program for its MOS 0811s. As illustrated previously on page nine regarding employment of ATS's to stimulate CMO growth throughout the regiments, progressive CA training within artillery battalions is unlikely to occur unless regimental commanders leverage their ATS's. The artillery is currently performing CAA; therefore, it can be expected that the community will be called upon to fulfill CA responsibilities in support of future contingencies. Creating an inherent training capability within the artillery regiments and leveraging that capability to promote a sustained and progressive CA program of instruction will enhance artillery units' responsiveness to the Marine Corps' CA needs.

Transformation Proposal #3: Engrain limited tactical IO within the Artillery

The first Transformation proposal calls for further CMO investment by and for artillery headquarters. The second Transformation Proposal is an extension of the CMO additional

mission, appealing for the preparation of artillery units to perform specified CAA. This third Transformation proposal would extend the artillery's non-lethal mission to include defined Information Operations (IO) tasks. It thus raises three critical questions:

1. What is IO?
2. Does the Marine Corps need an expanded IO capability?
3. If so, why task the artillery community to fulfill this need?

To start, IO is defined as:

The integrated employment of the core capabilities of Electronic Warfare (EW), Computer Network Operations (CNO), Psychological Operations (PSYOP), Military Deception (MILDEC) and Operational Security (OPSEC)...[employed to] influence, disrupt, corrupt or usurp adversarial human and automated decision-making while protecting our own.⁵¹

IO is further defined within joint doctrine to include “supporting capabilities,” comprised of information assurance (IA), physical security, counter-intelligence (CI), and physical attack, plus “related capabilities” including public affairs (PA) and CMO.

While this definition is not universally accepted,⁵² there is general consensus that

Information Operations proficiency is vitally important to our nation's future as:

There appears to be an emerging recognition among warfighters that a broader and more aggressive, comprehensive, and holistic approach to IO – an approach that recognizes the challenges of the global information environment and seamlessly integrates the functions of traditional IO...is required to succeed on the information-age battlefield.⁵³

Furthermore,

To dominate...we need to ensure that information operations receive the same level of emphasis and involvement that our commanders have traditionally allocated to conventional maneuver operations.⁵⁴

To address this operational need, a CMC mission order dated April 21, 2005, directed the Deputy Commandant (DC) of Plans, Policy, and Operations (PP&O) to “develop a POA&M [Plan of Action and Milestones] for fully integrating Information Operations (IO) into all aspects of MAGTF operations; focusing on abilities to influence key target audiences across the

spectrum of conflict.”⁵⁵ A proposal to create the Marine Corps Information Operations Center (MCOIC), based in Quantico, Virginia, resulted from this directive. The center is designed to:

*Support the MAGTF staff by providing tactically focused, deployable, IO support teams who will assist in IO tactics development as well as formulating requirements including research and development priorities...In addition to operational support, the MCOIC will provide the ability for the MAGTF Commander to leverage the other service, joint and federal agency IO capabilities and IO centric intelligence expertise through reach back facilitated by relationships developed by MCOIC.*⁵⁶

Upon review, shortcomings with MCOIC’s table-of-organization (T/O) and its concept of employment can be identified. The T/O calls for only 117 service personnel and another 58 civilian enablers.⁵⁷ Additionally, MCCDC has declared that “[the Marine Corps’] deployed MAGTFs need an IO ‘reach-back’ capability [and not an embedded or organic small-unit capability].”⁵⁸ While the MCOIC’s 175 service members⁵⁹ are a welcome addition to the Marine Corps, and the reach-back capability does include small fly-away detachments (four teams of four to six personnel by Table of Organization) to support Expeditionary Commanders,⁶⁰ MCOIC will not possess the capacity to provide the embedded IO capabilities that expeditionary forces’ small units require.⁶¹

From where will this small-unit, embedded capability come? The Marine Corps’ most recent Ground Board in December 2007 touched on this very question.⁶² Arguably, the Marine Corps’ artillery community is well-suited to formally assume the responsibility of embedded, decentralized IO in support of infantrymen. Such an initiative would combine fire support (lethal and non-lethal) under the cognizance of the artillery. Such a suggestion is not only feasible, but for two reasons is beneficial. First, it fully embraces the concept of multi-purpose forces, and second, it ultimately enhances the ability of the Marine Corps to conduct full-ROMO targeting. Both justifications warrant further detail.

A *general-purpose* artillery fire supporter intrinsically understands targeting. The mechanics of targeting form the foundation of instruction provided to artillerymen at entry level training (ELT),⁶³ and this foundation is built upon throughout a fire supporter's career. The transition from lethal to full spectrum targeting (to include IO) is practical due to a shared foundation in training and employment as demonstrated by close review of the IO Training and Readiness (T&R) manual. The manual illustrates that a significant portion of the individual training standards (ITS) for IO is tied to the targeting cycle. In essence, the Marine Corps' IO capabilities can be efficiently expanded by transforming *general purpose* artillery fire supporters into *multi-purpose* fire supporters. Figuratively speaking, it is a matter of *adding tools* to a carpenter's tool box, not *building* a new carpenter.

As an institution, the Marine Corps views information "[as means by which to] secure, shape, and condition battlespace...similar...to indirect fire weapons systems [such as artillery] organic to the Marine Air Ground Task Force (MAGTF)."⁶⁴ More so, targeting, both lethal (e.g., artillery) and non-lethal (e.g., IO), is most effective when levied synergistically.⁶⁵ In historical and contemporary practice, the application of kinetic and non-kinetic fires achieves greater targeting success by ensuring a unified targeting approach facilitated by artillery fire supporters.⁶⁶ In an effort to forge fire support unity of effort, it is logical to consolidate lethal and non-lethal targeting responsibilities doctrinally under a multi-purpose fire supporter.

IO has been defined, it has been demonstrated that the Marine Corps is attempting to further expand its IO capabilities, and it has been revealed that the artillery community is best-situated to lead the Marine Corps' IO expansion. The three recommended initiatives below will address the small-unit embedded IO needs of expeditionary forces while minimizing the tax on the Marine artillery:

1. Further define and then commit artillery fire supporters to *specific* IO core tasks.

2. Commit 0802 artillery officers and focus the MOS 0861 Fire Support Man as the embedded IO experts in support of infantry/maneuver operations.
3. Commit organic resources to the artillery regiments' Artillery Training Schools (ATS's); create a standardized, comprehensive, and progressive IO training program.

Comparable to the limited scope of the second Transformation proposal regarding CAA, the artillery community can only reasonably perform a specified portion of the IO core competencies.⁶⁷ IO functions such as Electronic Warfare (EW) or Computer Network Operations (CNO) require advanced technical skill sets that the artillery cannot reasonably fulfill. Rather, those specific functions will require the efforts and expertise of other MOS's, MCOIC personnel, or other activities within the Marine Corps. Additionally, a number of the IO core competencies, such as military deception (MILDEC), operational security (OPSEC), or Force Protection (FORPRO), are *command responsibilities* that span all warfighting functions.⁶⁸ These are not self-contained tasks of a cell or section within an artillery unit, and, hence, are not appropriate for formal tasking specifically to the artillery - they are a collective effort of all elements of the Expeditionary Force. As a result, the particular IO-related tactical tasks assigned to the artillery community must be limited to:

- Psychological Operations (PSYOP – core competency of IO)
- Public Affairs (PA) including combat correspondent (COMCOR) functions – (related capability)
- Combat Camera (COMCAM – additive capability)

These three IO tasks are realistic skill sets that, with additional training and manpower considerations, the Marine Corps' artillery can capably assume without diluting its ability to conduct lethal artillery operations.

The artillerymen best suited to fulfill the specified IO core tasks are artillery officers (0802s) and fire supportmen (MOS 0861). As previously discussed, both of these MOSs' targeting skills provide a foundation for IO learning and implementation.⁶⁹ More so, it facilitates

the synergistic application of commanders' lethal and non-lethal targeting efforts.⁷⁰ This has been routinely demonstrated during OIF, as both lethal and non-lethal targeting efforts have been balanced by artillerymen serving as members of Fire Support Coordination Centers (FSCCs), Liaison (LNO) Teams, and Forward Observer (FO) Teams.⁷¹ After-action reports⁷² (AARs) and subject matter expert (SME) testimony⁷³ support that the greatest friction point for artillery officers fulfilling their OIF-adopted non-lethal targeting responsibilities has not been the tasks themselves, but the relative non-availability of training and education provided prior to deployment; other than orientation or introductory training, on-the-job learning was the rule and not the exception.⁷⁴ MOS 0802s and 0861s, properly trained in the fundamentals of PSYOP, PA (to include COMCOR), and COMCAM would create a sizable volume of non-lethal experts embedded within their parent artillery units or attached to a supported infantry unit within a forward-deployed expeditionary force.

Similar to the CMO and CA proposals, it is incumbent upon the artillery regiments to establish a standardized, comprehensive, and progressive IO training program. Over the past few years, the artillery has grown a number of experienced IO officers and SNCOs. These Marines' skills should be leveraged to expand the IO capabilities of all 0802s and 0861s within the regiments. Similar to the initiatives stemming from the January 2008 CMO Conference, the artillery Operational Advisory Group (OAG), MCOIC, and the Training and Education Command (TECOM) should collaborate to establish a formal training package centered on the artillery's specified IO core tasks. The artillery community must ensure that the IO training pipeline provides a foundation of PSYOP, PA, and COMCAM skill sets; this training pipeline must then be established as required training for 0802s and 0861. (Appendix J outlines a modified MOS Roadmap for MOS 0861s, i.e. the skill training and professional military education required to expand the practical knowledge and skills of 0861s to perform IO).

CONCLUSION

The framework of this proposal *does* hinge upon the commonly accepted tenet that the military (and its sub-elements, to include the Marine Corps' artillery) require further transformation to combat hybrid threats. In doing so, the Marine artillery, and other elements of the Marine Corps, as well as other elements throughout DOD, must develop the ability and agility to transition between or otherwise synchronize lethal and non-lethal effects. Specific to the artillery community, the artillery operations specialists must enhance the community's CMO capabilities. Artillery cannoners should fuel the expansion of the community's additional CMO mission into civil affairs activities. Likewise, the artillery community's fire supporters must adopt specific aspects of Information Operations (IO) as an additional mission. All three of these "multi-purpose" efforts would expand the embedded, small-unit, non-lethal capabilities within forward-deployed expeditionary forces.

This research suggests that the Marine Corps artillery's versatility is vital to the conduct of full-spectrum operations. This additional mission-burden of CMO, CA, and IO can be shouldered by artillerymen, but only if the Marine Corps as an institution willingly commits assets and resources to build capability and efficiency in support of this transformation process. Specifically, there are three critical enablers that would support the Transformation:

1. The mission of Marine Corps artillery must be modified.
2. The Marine Corps' current 202K manpower plus-up plan must be revamped.
3. Manpower management and career management of artillery must be focused.

Without these critical enablers, the artillery will experience the following deficiencies:

- Significant degradation in the performance of its primary lethal doctrinal mission.
- Training inefficiencies that will prevent proper advances in the non-lethal realm.
- The lack of depth needed to conduct simultaneous and/or efficient transition between lethal and non-lethal operations.

The three critical enablers are discussed in turn and will highlight how the potential deficiencies will be mitigated.

Critical Enabler #1: Modified Mission Statement

A mission statement serves as the “DOTMLPF nucleus”⁷⁵ by which all concepts and initiatives are examined and validated. DOTMLPF - Doctrine, Organization, Training, Material, Leadership (and education), Personnel, and Facilities – are the pillars by which concepts, such as the three Transformation proposals that from this examination, are formally accessed. Adoption of the Transformation proposals, focused on the Training and Personnel aspects of DOTMLPF, would require a modified mission statement. As such, below are the current and recommended mission statements for the Marine Corps artillery:

Current Marine Artillery Mission: furnish close, continuous fire support by neutralizing, destroying, or suppressing targets that threaten the success of the supported unit.⁷⁶

Proposed Marine Artillery Mission: in support of an expeditionary force conducting full spectrum operations, furnish close continuous fire support by neutralizing, destroying, or suppressing targets that threaten the success of the supported unit. As required, conduct civil military operations (CMO), to include specified civil affairs activities (CAA), and specified Information Operations (IO tasks).

(Current and proposed mission statements for specific echelons of Marine artillery command and their associated Mission Essential Task Lists (METLs) are detailed in Appendix I).

Critical Enabler #2: Revisit the 202K Manpower Plan

The current 202K manpower plus-up plan was designed without consideration of this paper’s artillery transformation proposals. To facilitate the proposed expansion of the artillery’s mission to include significant non-lethal tasks, the Marine Corps must reexamine its manpower plan to support this requirement. The current 202K manpower plan provides for plus-ups within the artillery community, geared towards increasing the number of

artillery firing batteries and radar sections. Figure 1 below outlines the 202K plan, but is limited to artillery MOS-specific manpower increases:

	FY07	FY08	FY09	FY10	FY11	TOTAL
Units ⁷⁷	5/10 HQ CBR Platoon ANGLICO Plt	Firing Btry 2 ANGLICO Plts	Firing Btry CBR Plt	Firing Btry CBR Plt	N/A	
0802s	n/a	8	16	23	23	70
0811s	n/a	31	62	93	93	279
0848 feeders	n/a	29	58	87	87	261
0848s	n/a	4	9	13	13	39
0861s	n/a	12	24	36	36	108

Figure 1: 202K Manpower Plus-up: Artillerymen-specific⁷⁸

While the manpower increases will provide the artillery community with increased lethal capacity, they do not incorporate the proposed expanded mission (CMO, CA, and IO tasks). More specifically, while the 202K manpower plan creates additional artillery units to support sustained-deployments with greater lethal capabilities, the 202K manpower plan does *not* account for the following non-lethal considerations:

- The significant manpower plus-ups required at the regiments' Artillery Training Schools (ATS's), as addressed in the three Transformation Proposals.
- The increase of 0802-filled IO officer billets within an infantry battalion and regimental headquarters, a change that is already incorporated within T/O⁷⁹ but was not considered as part of the 202K manpower plus-up plan.
- The vital increase in staffing that artillery battalions and regiments will require in order to adequately conduct simultaneous lethal and non-lethal missions (in accordance with the "four-block war" concept).

The artillery Tables of Organizations need to be modified to account for the manpower deficiencies as outlined above. More so, the staffing efforts of a full-spectrum artillery community must be re-prioritized (similar to that of the infantry community) with a "Manning-and-Staffing Precedence of 100% - Expected Manning and Staffing."⁸⁰ Such efforts to expand and then fill artillery unit T/O's with the much-needed depth they will need to develop, execute,

and sustain simultaneous lethal and proposed non-lethal missions. A MCCDC-initiated DOTMLPF process would be required to determine the appropriate support requirements.

Critical Enabler #3: Sharpen Artillery MOS Manpower Management and Career Management

A refined full-spectrum mission statement and a refined 202K manpower plus-up in support of the artillery are critical to enhancing full-spectrum expeditionary operations.

However, a final essential step is needed to maintain full-spectrum capability – retention of the diverse, technical, advanced skills within the multi-purpose artillery community and, more specifically, the expeditionary force. **The manpower assignments and career management of artillerymen must deliberately maintain a full-spectrum artillery community.** Specifically, the following assignments and management adjustments should be made:

- Artillery officers and enlisted Marines must be assigned to **B-Billets** (for artillerymen, billets outside of an artillery organization and one's primary MOS) that directly support the lethal or non-lethal aspects of the proposed artillery mission.
- Associated with those B-Billets, **formal schooling opportunities** must be provided to artillerymen preparing to fulfill non-lethal duty assignments.
- In conjunction with formal schooling and follow-on non-lethal assignments, designation of appropriate **Additional MOSs (AMOS) should be assigned** to help monitor and manage these respective populations of trained and experienced Marines.
- To further refine preparation of artillerymen in support of full-spectrum operations, the **MOS Roadmaps** for enlisted artillerymen must be revamped accordingly.⁸¹

The diverse technical skills of the proposed, full-spectrum artillery mission demand a significant training investment and necessitate tangible practical experience. As a result, artillery officers and enlisted Marines should have very limited opportunities to fulfill traditional non-fires related B-Billets such as recruiting duty, drill instructor duty, security forces, and Marine Security Guard. Instead, artillerymen should be assigned to appropriate non-lethal formal schools and then follow-on formal assignments to CMO, CA, and IO billets in support of Expeditionary Forces, or as part of joint or exchange tours.

In summary, to support the proper assignment and development of these added, non-lethal responsibilities, the Marine Corps must modify the artillery community's mission to reflect its full-spectrum responsibilities. More importantly, this expanded mission must be prioritized and resourced accordingly. Additionally, the artillery must be fortified with greater manpower depth and expertise; refinement of the 202K manpower plan to include staffing-goal prioritization would satisfy this requirement. Finally, full-spectrum artillerymen must be formally trained and then assigned to billets in which much-needed experience can be gained and, more so, where these critical non-lethal skills can be maximized by expeditionary forces.

If today, the Marine Corps were to adopt this Transformation proposal – further development of the artillery's CMO mission, expansion into CAA, and adoption of specified IO tasks – a multi-purpose fire support force would be fully operational in support of the 2015 Expeditionary Commander. Until this Transformation effort takes place, Marine artillery will continue to demonstrate an unbalanced fire support aptitude. The Marine Corps requires and must now resource the artillery community to better fulfill its non-lethal deficit.

APPENDIX A

TERMS and DEFINITIONS

C

Center of Gravity: *A nation's, military's, unit's, or element's primary source of moral or physical strength, power, and resistance. Also referred to as a COG.*⁸²

Civil Affairs: *Designated Active and Reserve component forces and units organized, trained, and equipped specifically to conduct civil affairs activities and to support civil-military operations. See also civil affairs activities; civil military operations. Also called CA.*⁸³

Civil Affairs Operations: *Those military operations planned, supported, executed, or transitioned by Civil Affairs forces through, with, or by the indigenous population and institutions, intergovernmental organizations, nongovernmental organizations, or other governmental agencies to modify behaviors, to mitigate or defeat threats to civil society, and to assist in establishing the capacity for deterring or defeating future civil threats in support of civil-military operations or other United States objectives. Also referred to as CAO.*⁸⁴

Civil Information Management: *Civil Information pertains to Civil Areas, Structures, Capabilities, Organizations, People, and Events (CASCOPE) within the civil component of the operational environment, which can be fused or processed to increase situational awareness, situational understanding, or situational dominance. Civil Information Management is the process whereby civil information is collected, entered into a central database, and internally fused with the supported unit, HHQ, other USG and DoD agencies, IGOs, and NGOs to ensure the timely availability of information for analysis and the widest possible dissemination of the raw and analyzed civil information to military and non-military partners throughout the Area of Operations. Also referred to as CIM.*⁸⁵

Civil Military Operations: *The activities of a commander that establish, maintain, influence, or exploit relations between military forces, governmental and nongovernmental civilian organizations and authorities, and the civilian populace in a friendly, neutral, or hostile operational area in order to facilitate military operations or to consolidate and achieve operational US objectives. Civil Military Operations may include performance by military forces of activities and functions normally the responsibility of the local, regional, or national government. These activities may occur prior to, during, or subsequent to other military actions. They may also occur, if directed, in the absence of other military operations. Civil-military operations may be performed by designated civil affairs units, by other military forces, or by a combination of civil affairs and other forces. Also called CMO.*⁸⁶

Computer Network Attack: *Operations to disrupt, deny, degrade, or destroy information resident in computers and computer networks, or the computers and networks themselves. Electronic Attack (EA) can be used against a computer but it is not computer network attack (CNA). CNA relies on the data stream to execute the attack while EA relies on the electromagnetic spectrum. An example of the two operations is the following: sending a code or instruction to a central processing unit that causes the computer to short out the power supply is CNA. Using an*

electromagnetic pulse device to destroy a computer's electronics and causing the same result is EA. Also called CNA.⁸⁷

Computer Network Defense: *Defensive measures to protect and defend information, computers, and networks from disruption, denial, degradation, or destruction. Also called CND.⁸⁸*

Critical Capability: *a nation's, unit's, or element's primary abilities that merit a center of gravity to be identified as such within the context of a given scenario, situation, or mission. Also referred to as CC.⁸⁹*

Critical Requirement: *Essential conditions, resources, and/or means that enable a critical capability to be fully operative or effectual. Also referred to as CR.⁹⁰*

Critical Vulnerability: *Critical Requirements, or components thereof, which are deficient or vulnerable and could potentially result in detrimental, decisive results. Also referred to as CV⁹¹*

D

Direct Support: *A mission requiring a force to support another specific force and authorizing it to answer directly to answer directly the supported force's request for assistance.⁹² Direct Support (DS) is one of the 4 tactical missions that, per doctrine, an artillery battalion can assume.*

E

Entry-Level Training: *Pipeline training that equips students for service with the Marine Operating Forces.⁹³*

F

Foreign Humanitarian Assistance: *Plan, advise, coordinate, support, and participate in the execution of actions and programs to relieve or reduce the results of natural or man-made disasters or other endemic conditions such as human pain, disease, hunger, or privation that might present a serious threat to life or that can result in great damage to or loss of property. Also referred to as FHA.⁹⁴*

G

General Support: *That support which is given to the supported force as a whole and not to any particular subdivision thereof. General support artillery is artillery which executes fire directed by the commander of the unit to which it originally belongs or is attached. It fires in support of the operation as a whole rather than in support of a specific subordinate unit.⁹⁵ General Support (GS) is one of the 4 tactical missions that, per doctrine, an artillery battalion can assume.*

General Support Reinforcing: *General support reinforcing artillery has the mission of supporting the force as a whole and of providing reinforcing fires for another artillery unit.⁹⁶ General Support Reinforcing (GSR) is one of the 4 tactical missions that, per doctrine, an artillery battalion can assume..*

I

Information Operations: *The integrated employment of the core capabilities of Electronic Warfare (EW), Computer Network Operations (CNO), Psychological Operations (PSYOP), Military Deception (MILDEC) and Operational Security (OPSEC), in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision-making while protecting our own.*⁹⁷

M

Mission Essential Tasks: *A Mission Essential Task (MET) is a collective task in which an organization must be proficient in order to accomplish an appropriate portion of its wartime mission(s). MET listings are found in the T&R Manual; all events in the T&R Manual support a MET.*⁹⁸

Mission Essential Task List: *Descriptive training document that provide units a clear, warfighting focused description of collective actions necessary to achieve wartime mission proficiency. The service-level Mission Essential Task List (METL), that which is used as the foundation of the T&R Manual, is developed using Marine Corps doctrine, Operational Plans, T/Os, UJTL, UNTL, and MCTL. For community-based T&R Manuals, an occupational field METL is developed to focus the community's collective training standards. Commanders develop their unit METL from the service-level METL, operational plans, contingency plans, and SOPs.*⁹⁹

N

Nation Assistance: *Plan, advise, coordinate, support, and participate in the execution of operations that provide civil or military assistance (other than FHA) to a foreign nation by US forces within that nation's territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between the US and that nation. Support the Host Nation by promoting sustainable development and growth of responsive institutions. The goal is to promote long-term, regional stability. Also referred to as NA.*¹⁰⁰

P

Populace and Resource Control. *Plan, advise, coordinate, support, and participate in the execution (as needed or directed) of measures that are normally the responsibility of the indigenous civil government, which provide security for the populace, detect and reduce the effectiveness of enemy agents, deny human or material resources to the enemy, regulate the consumption of material resources, and mobilize human or material resources. May be executed in conjunction with, or as an integral part of, all military operations. Also referred to as PRC.*¹⁰¹

Public Affairs: *The use of command information, community relations activities, and public information directed to various national and international publics, in support of a combatant commander's public information needs at all operational levels. Also called PA.*¹⁰²

R

Reinforcing: In artillery usage, a tactical mission in which one artillery unit augments the fire of another artillery unit.¹⁰³ The reinforcing (R) mission is one of the 4 tactical missions that, per doctrine, an artillery battalion can assume.

S

Support to Civil Administration: Plan, advise, coordinate, support, and participate in the execution of military operations that help to stabilize or to continue the operations of the governing body or civil structure of a foreign country, whether by assisting an established government or by establishing military authority over an occupied population. Some Support to Civil Administration is also manifested during Populace and Resource Control, Foreign Humanitarian Assistance, and Nation Assistance operations. Also referred to as SCA.¹⁰⁴

APPENDIX B

ACRONYMS

AAR	After-Action Report
ALMAR	All Marines (Administrative Message sourced by HQMC)
AMOS	Additional Military Occupational Specialty
ANGLICO	Air and Naval Gunfire Liaison Company
AT	Anti-Terrorism
ATFP	Anti-Terrorism Force Protection
ATS	Artillery Training School
BiMOS	Billet Military Occupational Specialty
Bn	Battalion
BNCOC	Battalion Command Operations Center
Btry	Battery
BOLC	Basic Officer Leaders Course
C2	Command and Control
CA	Civil Affairs
CAA	Civil Affairs Activities
CAG(s)	Civil Affairs Group(s)
CAO	Civil Affairs Operations
CAPT	Civil Affairs Planning Team
CAX	Combined Arms Exercise
CBR	Counter Battery Radar
CC	Critical Capability
CIM	Civil Information Management
CG	Commanding General
CMC	Commandant of the Marine Corps
CMO	Civil Military Operations
CMOC	Civil Military Operations Center
CNA	Computer Network Attack
CND	Computer Network Defense
CNO	Computer Network Operations

COC	Combat Operations Center
COG	Center of Gravity
COIN	Counter Insurgency
COMCAM	Combat Camera
COMCOR	Combat Correspondent or Combat Correspondance
CONUS	Continental United States
CP	Counter-Propaganda
CR	Critical Requirement
CV	Critical Vulnerability
DC	Deputy Commandant
DO	Distributed Operations
DOTMLPF	Doctrine, Operations, Training, Material, Leadership (and education), Personnel, and Facilities
DoD	Department of Defense
DS	Direct Support
EA	Electronic Attack
EBO	Effects Based Operations
EFSS	Expeditionary Fire Support System
EW	Electronic Warfare
EWTG	Expeditionary Warfare Training Group
EWTGLANT	Expeditionary Warfare Training Group Atlantic
EWTGPAC	Expeditionary Warfare Training Group Pacific
FAO	Foreign Area Officer
FDC	Fire Direction Center
FHA	Foreign Humanitarian Assistance
FO	Forward Observer
FORPRO	Force Protection
FSC	Fire Support Coordinator
FSCC	Fire Support Coordination Center
GP	General Purpose
GS	General Support
GSR	General Support Reinforcing

GWOT	Global War on Terrorism
HA	Humanitarian Assistance
HIMARS	High Mobility Artillery Rocket System
HQ	Headquarters
HQMC	Headquarters Marine Corps
IO	Information Operations
ISO	in support of
IW	Information Warfare
IZ	Iraq Deployment
JP	Joint Publication
JROC	Joint Review Oversight Committee
LNO	Liaison Officer
LT	Lieutenant
LWH	Light-Weight Howitzer
MAGTF	Marine Air-Ground Task Force
MAOBC	Marine Artillery Officer Basic Course
MCAGCC	Marine Corps Air-Ground Combat Center
MCCDC	Marine Corps Combat Development Command
MCCRE	Marine Corps Combat Readiness Evaluation
MCI	Marine Corps Institute
MCIOC	Marine Corps Information Operations Center
MCT(s)	Marine Combat Task(s)
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEP	Mobile Electric Power
MET(s)	Mission Essential Task(s)
METL(s)	Mission Essential Task List(s)
MEU	Marine Expeditionary Unit
MHE	Materials Handling Equipment
MILDEC	Military Deception
MLRS	Multiple Launch Rocket System

MOS	Military Occupational Specialty
MOS-T	Military Occupational Specialty Training
MROC	Marine Review Oversight Committee
MSC	Major Subordinate Commands
MV	Mojave Viper
NA	Nation Assistance
NCO	Non-Commissioned Officer
NGO	Non-Governmental Organization
OAG	Operational Advisory Group
OCS	Officer Candidate School
OIF	Operation Iraqi Freedom
OGA	Other Government Agency/Agencies
OJT	On-the-Job Training
OPSEC	Operational Security
PA	Public Affairs
PLI	Information Operations and Space Integration Branch of PP&O, HQMC
Plt	Platoon
PMOS	Primary Military Occupational Specialty
POA&M	Plan of Action and Milestones
POSC	Psychological Operations Specialist Course
PP&O	Plans, Policy, and Operations
PRC	Populace and Resource Control
Prov Inf	Provisional Infantry
PSYOP	Psychological Operations
QRF	Quick Reaction Force
R	Reinforcing
RAO	Regional Affairs Officer
Regt	Regiment
ROMO	Range of Military Operations
SCA	Support to Civil Administration
SCETC	Security Cooperation and Education Training Center

SMCR	Select Marine Corps Reserve
SJA	Staff Judge Advocate
SME	Subject Matter Expert
SOP	Standard Operating Procedures
T/O	Table of Organization
TBS	The Basic School
TECOM	Training and Education Command
T&R	Training and Readiness
TFMP	Task Force Military Police
TO&E	Table of Organization and Equipment
USA	United States Army
USAF	United States Air Force
USMC	United States Marine Corps
USMCR	United States Marine Corps Reserve
USN	United States Navy

APPENDIX C

ABBREVIATIONS

37F	United States Army Psychological Operations Specialist
38B	United States Army Civil Affairs Specialist
0510	Information Operations Staff Officer (as defined by AMOS designator)
0511	Information Operations Specialist (as defined by AMOS designator)
0520	PSYOP Staff Officer (as defined by AMOS designator)
0530	Civil Affairs Officer (as defined by AMOS designator)
0531	Civil Affairs Specialist (as defined by AMOS designator)
0551	PSYOP Specialist (as defined by AMOS designator)
0802	Artillery Officer (as defined by MOS designator)
0811	Artillery Canonner (as defined by MOS designator)
0842	Artillery Radar Operator (as defined by MOS designator)
0844	Artillery Fire Direction Controlman (as defined by MOS designator)
0847	Artillery Meteorological Specialist (as defined by MOS designator)
0848	Artillery Operations Chief (as defined by MOS designator)
0861	Artillery Fire Support Man (as defined by MOS designator)
202K	Refers to USMC initiative to increase active duty end strength to 202,000

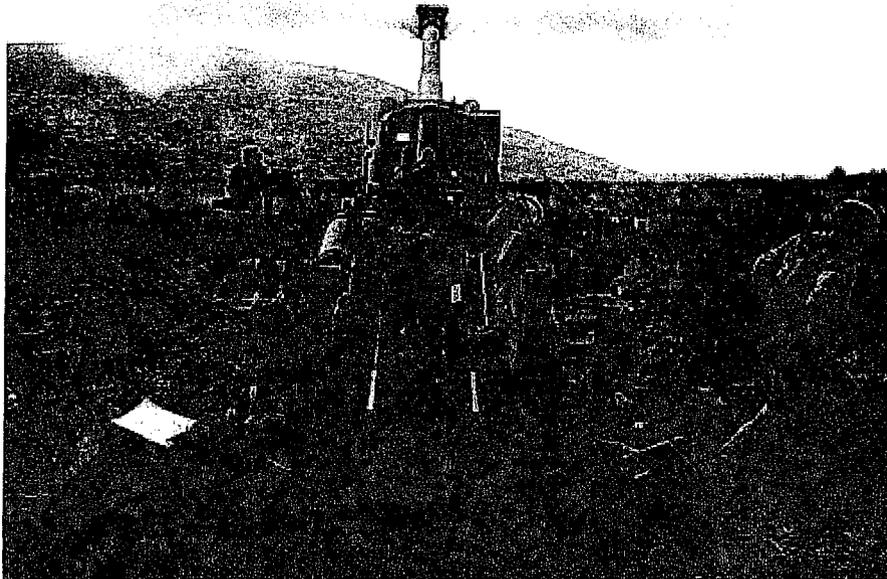
APPENDIX D

M777 Light Weight Howitzer

The M777 light-weight howitzer, the first leg or first component of the artillery triad, is a towed howitzer and fires a 155mm projectile round. It meets or exceeds all performance standards of its predecessor, the M198, to include its reduction in weight from the M198's 16,000 pounds to the M777's sub-ten thousand pound characteristic. The M777 is designed for movement (external lift) by the MV-22 Osprey tilt-rotor aircraft, providing the artillery community and its supported maneuver commanders with greater capability and flexibility.

The M777 began replacing the M198 howitzer in 2005. Since its initial fielding, the M777A1 and M777A2 variants have started to reach the operating forces. The A1 variant is digital-fire control system (DFCS) capable, exploiting a global-positioning system (GPS) capability for individual field pieces. This capability greatly expedites the efficiency of artillery occupation and support to the maneuver. The A2 variant is compatible with the M982 Excalibur round, a state-of-the-art precision munition.

The M777 is currently fielded to all four artillery regiments and is deployed overseas in support of Operation Iraqi Freedom.¹⁰⁵



Photograph 1: M777 Light Weight Howitzer, Towed 155mm¹⁰⁶



Photograph 2: M777 Light Weight Howitzer, Towed 155mm, Live-Fire¹⁰⁷

APPENDIX E

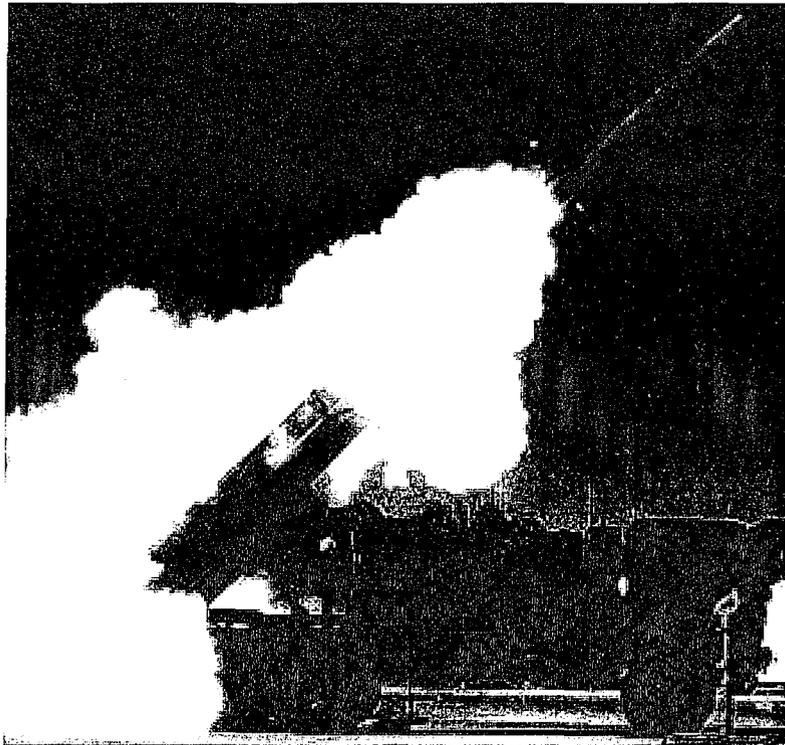
HIMARS

The High Mobility Artillery Rocket System (HIMARS) is considered the second leg or component of the artillery triad. The HIMARS has been integrated into the Marine Corps' artillery TRIAD to satisfy its need for a precision, deep fire capability. Specifically, it is designed to provide the MAGTF commander with around-the-clock, all-weather, organic, ground-based indirect fire support against long-range targets without pulling the commander's direct support artillery assets. Born from the tracked, two-pod Multiple Launch Rocket System (MLRS), the HIMARS was developed as a one-pod, wheeled platform, enhancing its mobility and utility as part of an expeditionary force.¹⁰⁸

The planned employment plan for the HIMARS includes two battalions and a support establishment. 5th Battalion, 11th Marines (5/11), an active duty artillery battalion, stationed at Camp Pendleton, California, is tasked to provide rocket and missile fire to all three active duty Divisions. 2nd Battalion, 14th Marines (2/14), a reserve component battalion, serves as the Marine Corps' other HIMARS battalion and fulfills the 14th Marines' Force Fires artillery role and/or serves the active duty Divisions as required. These two battalions have fully transitioned from traditional artillery and now serve as the Marine Corps' two organic rocket and missile battalions. Finally, there is a formal school house, facilitated by the Marine Detachment at Fort Sill, Oklahoma, dedicated to the training, education, and doctrinal development of HIMARS operations.¹⁰⁹



Photograph 3: High Mobility Artillery Rocket System (HIMARS) - Postured¹¹⁰



Photograph 4: High Mobility Artillery Rocket System (HIMARS) - Firing¹¹¹

Appendix F

Expeditionary Fire Support System

The Expeditionary Fire Support System (EFSS) is a 120mm mortar and will serve as the direct support weapon system for the vertical assault element of the Ship to Objective maneuver force. It is a descendent of a currently-employed French mortar system and has been modified for stowage and transportation within an MV-22 Osprey.

The EFSS will be employed within the ground combat element of the Marine Air-Ground Task Force (MAGTF) and will be manned and supported by the Marine artillery regiment within the Marine division. The regiment's M777 light-weight howitzer battalions will cross-train with EFSS, and based on specific mission-needs, commanders will task organize with M777 and EFSS accordingly. A critical element of the Marine Corps ground fires triad the EFSS will provide increased speed, tactical agility, and vertical transportability with minimal tradeoffs in lethality. The V-22 Osprey will serve as the primary-mover for the internally-stowed EFSS, its support vehicles and equipment, ammunition, and crew. EFSS currently possesses a maximum range of eight kilometers, can be emplaced in three minutes, and can fire a variety of ammunition at a rapid rate of four rounds per minute and a sustained rate of two rounds a minute. A precision-guided, extended range munition is currently under development that will extend the EFSS's range out to seventeen kilometers.¹¹² EFSS is currently completing testing; fielding to 10th and 11th Marine Regiments should begin during the second half of the current calendar year.

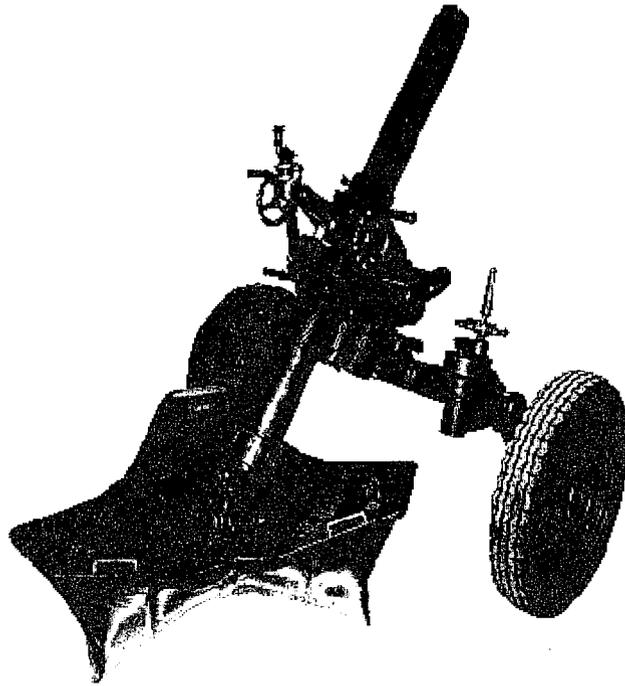


Figure 2: Expeditionary Fire Support System (EFSS)¹¹³



Photograph 5: Expeditionary Fire Support System¹¹⁴
APPENDIX G

THESIS CONSTRUCT AND DESIGN

Dr. Joe Strange has authored a book entitled *Perspectives on Warfighting: Centers of Warfighting: Centers of Gravity & Critical Vulnerabilities*. Dr. Strange's book, derived from Carl von Clausewitz's center of gravity concept,¹¹⁵ was published to address a shortfall in current Marine Corps doctrine regarding "center of gravity" (COG) construct. He succinctly defines and then alludes to a procedure that examines friendly and enemy COGs. Dr. Strange extends the COG-process; he unfolds a process of deriving "critical capabilities" (CC) and "critical requirements" (CR). The process results in the identification of "critical vulnerabilities (CV)." He defines these four terms as follows:

COG: "Primary sources of moral or physical strength, power, and resistance."¹¹⁶

CC: "Primary abilities which merit a COG to be identified as such in the context of a given scenario, situation, or mission."¹¹⁷

CR: "Essential conditions, resources, and means for a CC to be fully operative."¹¹⁸

CV: "Critical requirements of components thereof which are deficient, or vulnerable to neutralization, interdiction, or attack (moral/physical harm) in a manner achieving decisive results – the smaller the resource and the effort applied and the smaller the risk and cost, the better."¹¹⁹

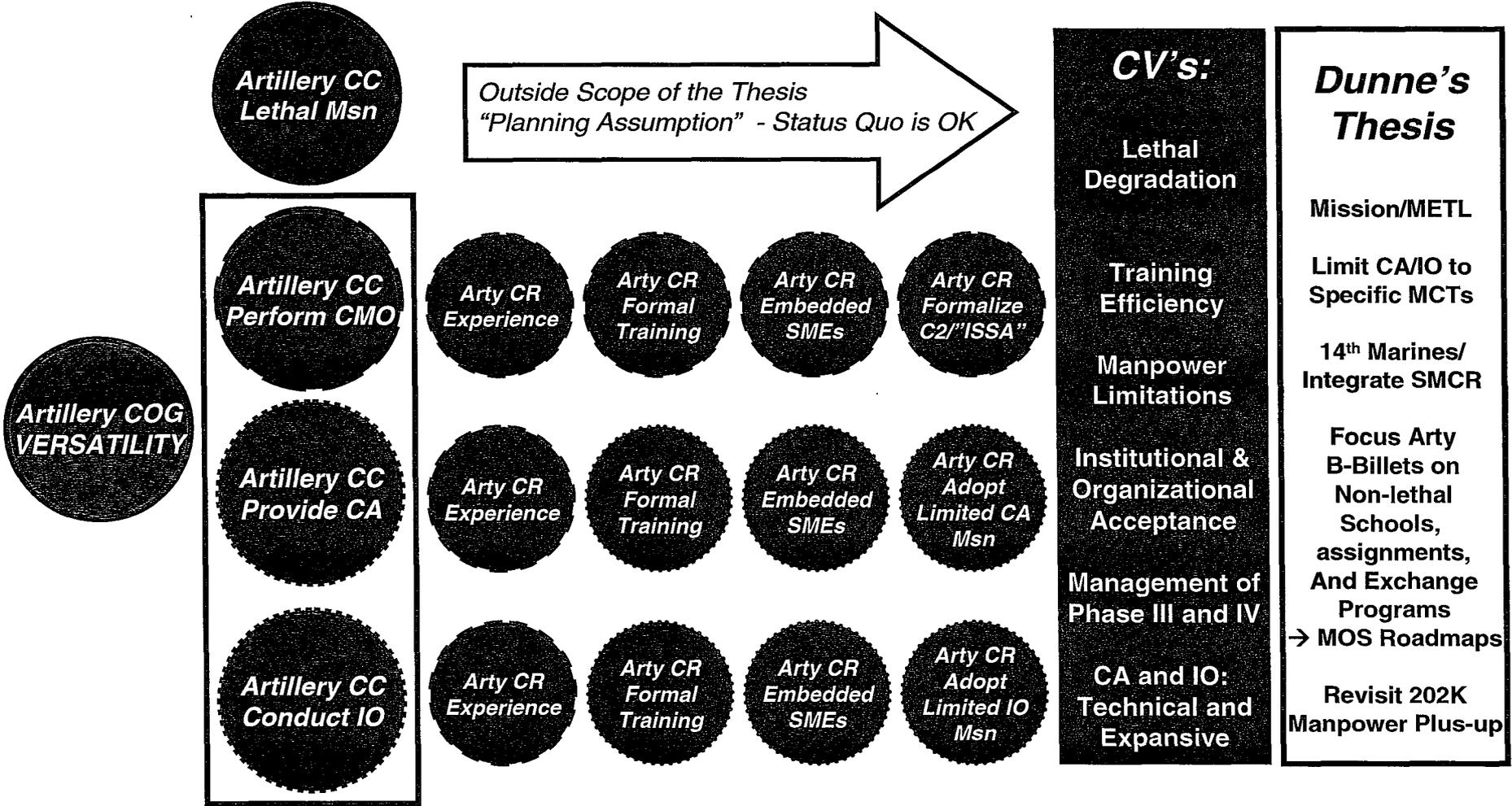
While not adopted as Marine Corps doctrine, the concepts of COG and CV are incorporated within MCWP 5-1, *the Marine Corps Planning Process*. Additionally, recent Joint Planning Publications including JP 5-0 incorporate the concept of COG.

Arguably, Dr. Strange's COG construct can be extended to problem solving – to include the problem of identifying and researching a thesis. Figure 3 below was utilized as the framework for the thesis design incorporated within this work. As the paper continued in conceptual design, Figure 4 was developed. Figure 4 serves as a flow chart that largely defines the construct and flow of this argument; it also serves as a visual representation or visual outline of this project.

The research that reinforces this Transformation argument was conducted within the framework outlined in Figure 4. While numerous secondary sources were utilized, the predominance of this paper's research was derived from primary sources, to include over ninety Subject Matter Expert Surveys. Appendices K, L, and M are enclosed; they served as the templates for Subject Matter Expert questionnaires for three separate target audiences. The first was artillery battalion commanders and primary staff (Appendix K), the second was infantry battalion commanders and primary staff (Appendix L), and the third was battery-level artillery officers (Appendix M). The returned surveys that contained pertinent insight were often followed-up with formal Subject Matter Expert interviews. The bibliography and endnotes contain specific quantitative and qualitative data derived from these surveys and interviews. The surveys and specific comments retrieved as part of the interview process were received under conditions of anonymity in order to encourage free-discourse and exchange of ideas. While this paper's thesis, construct, and detailed research were dependent upon the constructive input of nearly ninety commissioned officers, *in accordance with the paper's disclaimer, the opinions and conclusions of this paper are that of the author and not those who willingly agreed to support this argument's research efforts.*

Figure 3: MMS Research Model utilizing Dr. Strange's COG Analysis Construct

Transformation of the Marine Artillery ISO the 2015 Expeditionary Force
 Major J. P. Dunne: Thesis Examination using Dr. Joe Strange's COG analysis¹



DOD Mandate:	"Transform"	-Limits of Examination: Non-Lethal vice Lethal Manpower vice Equip/Tech
USMC Requirement:	General Purpose Expeditionary Force (w/ embedded, "distributed capabilities"), full ROMO flexibility.	
Artillery Obligation:	Formally expand mission into non-lethal realm	

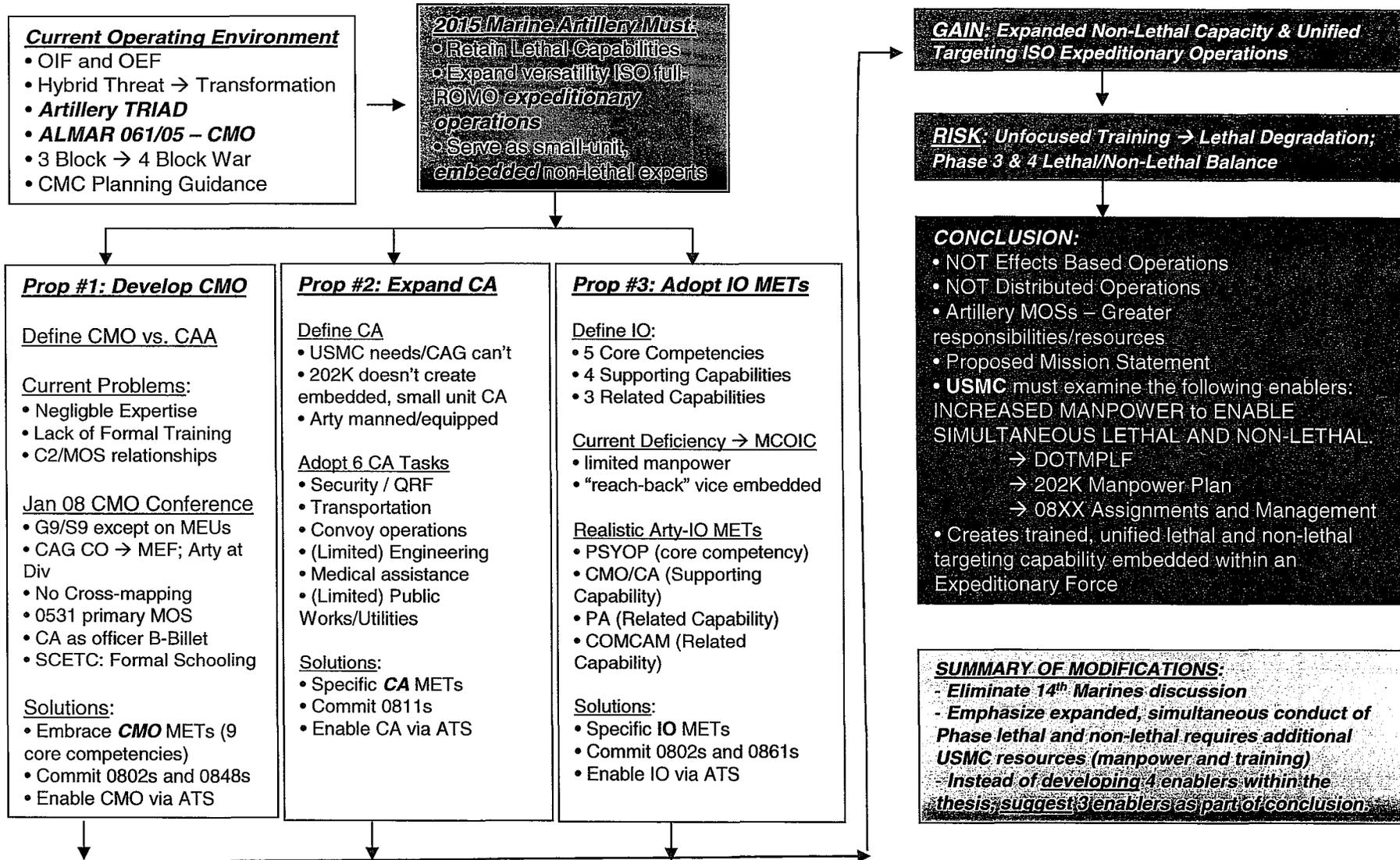
¹ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities: Building on a Clausewitzian Foundation*, 3.

Transformation of the Marine Artillery ISO the 2015 Expeditionary Force

Major J. P. Dunne: REVISED Thesis Flow and Interwoven Themes

THESIS: Expand Artillery Manpower and Training in support of 2015, full-ROMO Expeditionary Operations

Figure 4: MMS Revised Thesis Flow and Interwoven Themes



APPENDIX H

MODIFIED MISSION STATEMENTS

The definitions below that are denoted “Current Mission Statement” serve as the current doctrinal mission statements. The definitions below labeled “Proposed Mission Statement” have been drafted by the author to reflect those recommendations or proposals forwarded as part of this paper. As alluded to in the conclusion of this paper, modified mission statements (as part of a DOTMLPF review of the artillery community) are recommended in order to facilitate the necessary increases in manpower, formal training opportunities, and employment practices.

The text below contained within the proposed definitions that appear in *bold italics print* are the additive or modified text applied to the current doctrinal mission statement.

Current Marine Artillery Mission: *furnish close, continuous fire support by neutralizing, destroying, or suppressing targets that threaten the success of the supported unit.*¹²⁰

Proposed Marine Artillery Mission: *in support of an expeditionary force conducting full spectrum operations, furnish close continuous fire support by neutralizing, destroying, or suppressing targets that threaten the success of the supported unit. As required, conduct civil military operations (CMO), to include specified civil affairs activities (CAA), and specified Information Operations (IO) tasks.*

Current Mission Statement: Headquarters Battery, Artillery Regiment¹²¹

To provide the (artillery) Regimental Commander with the means to effectively command and control the artillery regiment and to coordinate the fires of other supporting arms as well as to provide administrative and logistical support for the headquarters battery. The Battery may detach survey (up to a limited 3rd order capability), engineer, counterbattery radar, artillery electronics maintenance, and meteorological sections in support of subordinate elements. On order, the Regiment assumes the primary civil military operations mission for the Division with the focus on coordinating and achieving unity of effort among all forces and nonmilitary organizations participating in stability operations in the Division’s battlespace.

Proposed Mission Statement: Headquarters Battery, Artillery Battalion

To provide the (artillery) Regimental Commander with the means to effectively command and control the artillery regiment and to coordinate the fires of other supporting arms as well as to provide administrative and logistical support for the headquarters battery. The Battery may detach survey (up to a limited 3rd order capability), engineer, counterbattery radar, artillery electronics maintenance, and meteorological sections in support of subordinate elements. On

*order, the Regiment assumes the primary civil military operations mission for the Division with the focus on coordinating and achieving unity of effort among all forces and nonmilitary organizations participating in stability operations in the Division's battlespace. On order, the Regiment assumes the additional mission of facilitating information operations within the Division's area of operations.*¹²²

Current Mission Statement: Headquarters Battery, Artillery Battalion¹²³

To provide the Artillery Battalion Commander with the means to effectively command and control battalion operations and to coordinate sustainment of subordinate and attached units in order to enable the artillery battalion to support ground combat operations. On order, the battalion assumes the primary mission of coordinating and conducting civil military operations in its supported area of operations.

Proposed Mission Statement: Headquarters Battery, Artillery Battalion

*To provide the Artillery Battalion Commander with the means to effectively command and control battalion operations and to coordinate sustainment of subordinate and attached units in order to enable the artillery battalion to support ground combat operations. On order, the battalion assumes the primary mission of coordinating and conducting civil military operations and civil affairs activities within its supported area of operations. On order, the battalion assumes the additional mission of facilitating information operations in its supported area of operations.*¹²⁴

Current Mission Statement: 155mm Howitzer Battery¹²⁵

The Battery, as part of an artillery Battalion, provides direct support (DS), general support (GS), reinforcing (R), and general support reinforcing (GSR) fires to support a Marine Air Group Task Force (MAGTF) conducting combat operations.

Proposed Mission Statement: 155mm Howitzer Battery

*The Battery, as an independent firing unit¹²⁶ or as part of an artillery Battalion, provides direct support (DS), general support (GS), reinforcing (R), and general support reinforcing (GSR) fires in support of a Marine Air Ground Task Force (MAGTF) conducting combat operations. On order, the Battery assumes the additional mission of facilitating information operations in its supported area of operations. On order, the Battery assumes the primary mission of coordinating and conducting civil affairs operations in its supported area of operations.*¹²⁷

APPENDIX I

MODIFIED MISSION ESSENTIAL TASK LISTS

The Mission Essential Task Lists (METLs) below that are denoted “current” are those METLs that are institutionally recognized within the contemporary Marine Corps. The METLs below labeled “proposed” have been drafted by the author to reflect those recommendations or proposals forwarded as part of this paper. The recommended modifications are presented in order to facilitate the recommended Transformation-based increases in manpower, formal training opportunities, and employment practices.

The text below contained within the METLs that appear in *bold italics print* are the additive or modified text applied to the currently accepted METL.

Current METL: Civil Affairs Unit

1. MET 1 Provide Forces (MAGTF)
2. MET 2 Provide Forces (Artillery Regiment/Battalion)
3. MET 3 Facilitate Populace and Resource Control
4. MET 4 Facilitate Foreign Humanitarian Assistance
5. MET 5 Facilitate Nation Assistance
6. MET 6 Manage Civil Information
7. MET 7 Facilitate Support to Civil Administration¹²⁸

Current METL: Artillery Regiment

1. MCT 1.1 Provide Forces
2. MCT 3.2.1.3 Integrate Fire Support w/ the Scheme of Maneuver
3. MCT 3.2.4.2 Conduct Indirect Fires
4. MCT 3.2.4.3 Conduct Counterfire
5. MCT 5.4.1.5 Conduct Civil Military Operations¹²⁹
 - A. MCT 1.2.2 Organize Forces
 - B. MCT 4.3 Combat Transportation Operation
 - C. MCT 5 Exercise Command and Control
 - D. MCT 5.1 Acquire, Process, Communicate Info
 - E. MCT 5.1.1 Provide and Maintain Communication
 - F. SC-RE-202 Construct field fortifications and protective structures
 - G. SC-RE-203 Conduct Material Handling Equipment (MHE) Support
 - H. SC-RE-207 Provide Mobile Electric Power (MEP) and refrigeration support
 - I. ITS 0503.03.08 Establish a Civil Military Operations Center (CMOC)
 - J. ITS 0503.03.09 Direct a CMOC¹³⁰

Proposed METL: Artillery Regiment

1. MCT 1.1 Provide Forces
2. MCT 3.2.1.3 Integrate Fire Support w/ the Scheme of Maneuver
3. MCT 3.2.4.2 Conduct Indirect Fires
4. MCT 3.2.4.3 Conduct Counterfire
5. MCT 4.10 Conduct Civil Military Operations
 - A. *Facilitate Cultural Relations*
 - B. *Facilitate Public Works and Utilities*
 - C. *Enable Civil Supply*
 - D. *Facilitate Civil Information*
 - E. *Enhance Public Communications*
 - F. *Improve Public Health*
 - G. *Enable Public Safety*
 - H. *Coordinate efforts in support of International Law*
 - I. *Mitigate impact of Dislocated Civilians on stability operations.*
6. *Conduct Civil Affair Activities***
 - A. *Provide Security Elements/QRF ISO CAA*
 - B. *Conduct Convoy Operations*
 - C. *Provide Transportation*
 - D. *Provide Limited Engineering*
 - E. *Provide Basic Medical Assistance*
 - F. *Provide rudimentary, essential public works and utilities*
7. *Conduct Information Operations***
 - A. *Perform Tactical Psychological Operations*
 - B. *Conduct/Augment Public Affairs*
 - C. *Conduct/Augment Combat Correspondent Activities*
 - D. *Conduct/Augment Combat Camera Operations*

Current METL: Headquarters Battery Regiment

1. MCT 3.2.4.5 Conduct Survey Operations
2. MCT 5 Exercise Command and Control
3. MCT 5.4.1.5 Conduct Civil Military Operations¹³¹
 - A. MCT 1.2.2 Organize Forces
 - B. MCT 4.3 Combat Transportation Operation
 - C. MCT 5 Exercise Command and Control
 - D. MCT 5.1 Acquire, Process, Communicate Info
 - E. MCT 5.1.1 Provide and Maintain Communication
 - F. SC-RE-202 Construct field fortifications and protective structures
 - G. SC-RE-203 Conduct Material Handling Equipment (MHE) Support
 - H. SC-RE-207 Provide Mobile Electric Power (MEP) and refrigeration support
 - I. ITS 0503.03.08 Establish a Civil Military Operations Center (CMOC)
 - J. ITS 0503.03.09 Direct a CMOC¹³²

Proposed METL: Headquarters Battery Regiment

1. MCT 3.2.4.5 Conduct Survey Operations
2. MCT 5 Exercise Command and Control
3. MCT 5.4.1.5 Conduct Civil Military Operations
 - A. *Facilitate Cultural Relations*
 - B. *Facilitate Public Works and Utilities*
 - C. *Enable Civil Supply*
 - D. *Facilitate Civil Information*
 - E. *Enhance Public Communications*
 - F. *Improve Public Health*
 - G. *Enable Public Safety*
 - H. *Coordinate efforts in support of International Law*
 - I. *Mitigate impact of Dislocated Civilians on stability operations.*
4. *Conduct Information Operations***
 - A. *Perform Tactical Psychological Operations*
 - B. *Conduct/Augment Public Affairs*
 - C. *Conduct/Augment Combat Correspondent Activities*
 - D. *Conduct/Augment Combat Camera Operations*

Current METL: Artillery Battalion (Cannon)

1. MCT 1.1 Provide Forces
2. MCT 3.2.1.3 Integrate Fire Support w/ the Scheme of Maneuver
3. MCT 3.2.4.2 Conduct Indirect Fires
4. MCT 5.4.1.5 Conduct Civil Military Operations¹³³
 - A. MCT 1.2.2 Organize Forces
 - B. MCT 4.3 Combat Transportation Operation
 - C. MCT 5 Exercise Command and Control
 - D. MCT 5.1 Acquire, Process, Communicate Info
 - E. MCT 5.1.1 Provide and Maintain Communication
 - F. SC-RE-202 Construct field fortifications and protective structures
 - G. SC-RE-203 Conduct Material Handling Equipment (MHE) Support
 - H. SC-RE-207 Provide Mobile Electric Power (MEP) and refrigeration support
 - I. ITS 0503.03.08 Establish a Civil Military Operations Center (CMOC)
 - J. ITS 0503.03.09 Direct a CMOC¹³⁴

Proposed METL: Artillery Battalion (Cannon)

1. MCT 1.1 Provide Forces
2. MCT 3.2.1.3 Integrate Fire Support w/ the Scheme of Maneuver
3. MCT 3.2.4.2 Conduct Indirect Fires
4. MCT 5.4.1.5 Conduct Civil Military Operations¹³⁵
 - A. *Facilitate Cultural Relations*
 - B. *Facilitate Public Works and Utilities*
 - C. *Enable Civil Supply*
 - D. *Facilitate Civil Information*
 - E. *Enhance Public Communications*
 - F. *Improve Public Health*

- G. Enable Public Safety*
- H. Coordinate efforts in support of International Law*
- I. Mitigate impact of Dislocated Civilians on stability operations.*
- 5. *Conduct Civil Affair Activities*
 - A. Provide Security Elements/QRF ISO CAA*
 - B. Conduct Convoy Operations*
 - C. Provide Transportation*
 - D. Provide Limited Engineering*
 - E. Provide Basic Medical Assistance*
 - F. Provide rudimentary, essential public works and utilities*
- 6. *Conduct Information Operations*
 - A. Perform Tactical Psychological Operations*
 - B. Conduct/Augment Public Affairs*
 - C. Conduct/Augment Combat Correspondent Activities*
 - D. Conduct/Augment Combat Camera Operations*

APPENDIX J

MODIFIED MOS ROADMAPS

The Marine Corps has designed roadmaps for the purpose of outlining career development and career progression for enlisted Marines, specific to an MOS. MOS roadmaps can be accessed on the TECOM website. Each MOS roadmap shares a common format and structure, to include an MOS overview divided in four components: skill training, professional military education, voluntary education, and college course and degree.

The information detailed below in Figures 5, 6, and 7 are specific to an artillery cannonner MOS 0811, the artillery operations specialists MOS 0848 and its feeder MOS's, and the artillery fire support specialist MOS 0861, respectively. Those items listed below are the civil affairs, civil military operations, and information operations non-lethal additions that are recommended in support of this Transformation argument. The annotations are additive and related to civil affairs, civil military operations, and information operations; they *augment* or are *additive* those items currently listed on the MOS 0811, MOS 0848, and MOS 0861 roadmaps.

MOS Roadmaps do not exist for the commissioned officer ranks. However, the suggestions outlined in Figures 5, 6, and 7 certainly could be extended to the commissioned officer ranks, or otherwise could serve as a model for similar additive training and education constructs for artillery officers.

	SKILL TRAINING	PROFESSIONAL MILITARY EDUCATION	VOLUNTARY EDUCATION	COLLEGE COURSES AND DEGREES
MOS 0811	<p>Required Skill Training:</p> <ul style="list-style-type: none"> - Add ATS-sanctioned CA training block (building block approach).¹³⁶ - Add SCETC CA Formal School as a prerequisite for those serving in CA B-Billets or CA-Exchange Tour. 	<p>Required PME including MCI's:</p> <ul style="list-style-type: none"> - Add ATS-sanctioned/supported once-a-month CA training (sustained, progressive training)¹³⁷ 	<p>Recommended MOS-Related Distance Learning Courses:</p>	<p>College Courses:</p>
	<p>Recommended Skill Training:</p> <ul style="list-style-type: none"> - Add USA CA Specialist Course.¹³⁸ 	<p>Recommended PME including MCIs:</p> <ul style="list-style-type: none"> - No current MCI exists specific to CA; recommend that TECOM and USMC CA experts collaborate to develop MCI 0531 "Civil Affairs Specialist." Once MCI 0531 is developed, add it to Recommended PME. 	<p>Recommended General Military Distance Education Course:</p> <ul style="list-style-type: none"> - Add UII Seabee Training Program.¹³⁹ 	<p>College Degrees:</p> <ul style="list-style-type: none"> - Add AA Degree in Construction Technology.¹⁴⁰
	<p>Recommended Billet Assignments:</p> <ul style="list-style-type: none"> - Add CA B-Billet within MAGTF or Exchange Tour¹⁴¹ 	<p>Professional Reading:</p> <ul style="list-style-type: none"> - Add <i>A Bell for Adano</i>¹⁴² 		<p>Apprenticeships:</p> <ul style="list-style-type: none"> - Add local apprenticeship programs pertinent to "essential, rudimentary services."¹⁴³

Figure #5: Recommended Additions to the MOS 0811 Roadmaps

	SKILL TRAINING	PROFESSIONAL MILITARY EDUCATION	VOLUNTARY EDUCATION	COLLEGE COURSES AND DEGREES
MOS 0848 and feeders	<p><i>Required Skill Training:</i></p> <ul style="list-style-type: none"> - Add ATS-sanctioned CMO training block (building block approach)¹⁴⁴ - Add SCETC CMO Formal School as a prerequisite for those serving in CMO B-Billets or CMO-Exchange Tour 	<p><i>Required PME including MCI's:</i></p> <ul style="list-style-type: none"> - Add ATS-sanctioned/supported once-a-month CMO training (sustained, progressive training)¹⁴⁵ 	<p><i>Recommended MOS-Related Distance Learning Courses:</i></p>	<p><i>College Courses:</i></p>
	<p><i>Recommended Skill Training:</i></p> <ul style="list-style-type: none"> - USA CA MOS-Training Course (9 wks at Fort Bragg)¹⁴⁶ - USA CA BNCOC Course¹⁴⁷ 	<p><i>Recommended PME:</i></p> <ul style="list-style-type: none"> - No current MCI exists specific to CA; recommend that TECOM and USMC CMO experts collaborate to develop MCI 0530 "Civil Military Operations." Once MCI 0530 is developed, add it to Recommended PME. 	<p><i>Recommended General Military Distance Education Course:</i></p>	<p><i>College Degrees:</i></p> <ul style="list-style-type: none"> - Add AA in Human Services Management.¹⁴⁸ - Add similar undergraduate and graduate programs, as applicable.
	<p><i>Recommended Billet Assignments:</i></p> <ul style="list-style-type: none"> - Add CA B-Billet within MAGTF or Exchange Tour¹⁴⁹ 	<p><i>Professional Reading:</i></p> <ul style="list-style-type: none"> - Add <i>The Prince</i> by Machiavelli;¹⁵⁰ 		<p><i>Apprenticeships:</i></p>

Figure #6: Recommended Additions to the MOS 0848 and Feeder MOS Roadmaps

	SKILL TRAINING	PROFESSIONAL MILITARY EDUCATION	VOLUNTARY EDUCATION	COLLEGE COURSES AND DEGREES
MOS 0861	<p><i>Required Skill Training:</i></p> <ul style="list-style-type: none"> - Add ATS-sanctioned IO training block (building block approach)¹⁵¹ - Add EWTG IO Orientation Course (1 week).¹⁵² 	<p><i>Required PME including MCI's:</i></p> <ul style="list-style-type: none"> - Add ATS-sanctioned/supported once-a-month IO training (sustained, progressive training)¹⁵³ 	<p><i>Recommended MOS-Related Distance Learning Courses:</i></p>	<p><i>College Courses:</i></p>
	<p><i>Recommended Skill Training:</i></p> <ul style="list-style-type: none"> - Add Psychological Operations Specialist Course (POSC)¹⁵⁴ - Add MOS-producing schools for Combat Correspondents (COMCOR) and Combat Camera (COMCAM) 	<p><i>Recommended PME:</i></p> <ul style="list-style-type: none"> - No current MCI exists specific to IO; recommend that TECOM and USMC IO experts collaborate to develop MCI 0510 "Information Operations." Once MCI 0510 is developed, add it to Recommended PME. 	<p><i>Recommended General Military Distance Education Course:</i></p>	<p><i>College Degrees:</i></p> <ul style="list-style-type: none"> - Add AA in Communications.¹⁵⁵ - Add similar undergraduate and graduate-level education, as applicable.
	<p><i>Recommended Billet Assignments:</i></p> <ul style="list-style-type: none"> - Add IO/PSYOP B-Billet within MAGTF, with MCOIC, or Exchange Tour.¹⁵⁶ - Add COMCAM or COMCOR B-Billet with MAGTF.¹⁵⁷ 	<p><i>Professional Reading:</i></p> <ul style="list-style-type: none"> - Add <i>Villages of the Moon: Psychological Operations in Southern Afghanistan</i>¹⁵⁸ - Add <i>The Man Who Never Was</i>¹⁵⁹ 		<p><i>Apprenticeships:</i></p>

Figure #7: Recommended Additions to the MOS 0861 Roadmaps

APPENDIX K

SUBJECT MATTER EXPERT SURVEY: ARTILLERY BATTALION
COMMANDER/STAFF

BACKGROUND/DEMOGRAPHICS¹⁶⁰

1. Please identify your previous assignments (start with current billet):

<i>Unit</i>	<i>Location</i>	<i>Billet</i>	<i>Start/End Date</i>

2. Do you possess an AMOS (0510) Information Operations Staff Officer?¹⁶¹
3. Have you served as an Information Operations Staff Officer?
4. Have you received any formal training in Information Operations?
5. Do you possess an AMOS (0530) as a Civil Affairs Officer?
6. Have you served as a Civil Affairs Officer?
7. Have you received any formal training in Civil Affairs or Civil Military Operations?
8. Do you possess an AMOS (0520) as a PSYOP Officer?
9. Have you served as a PSYOP Officer?
10. Have you received any formal training in PSYOP?

QUESTIONS FOCUSED ON THE BATTALION:

11. Did your artillery Battalion (Bn) headquarters (HQ) deploy ISO GWOT to serve as a functioning Bn HQ? (If “no”, skip to question 18)
12. Did your Bn perform a traditional artillery mission? (If “no”, skip to question 15)

13. If so, did your Bn conduct a T&R evaluation prior to deploying? Was the evaluation purposeful/productive? Why or why not?
14. If so, did your Bn conduct a Mojave Viper (MV)¹⁶² or equivalent training event? Was the evolution purposeful/productive? Why or why not? (Skip to question 18)
15. Since your Bn did not fulfill an artillery tactical mission ISO during its GWOT deployment, what was your Bn's mission? (Prov Inf, TFMP, CA, etc) .
16. If so, did your Bn conduct a T&R evaluation¹⁶³ prior to deploying? Was the evaluation purposeful/productive? Why or why not?
17. If so, did your Bn conduct a MV or equivalent training event? Was the evaluation purposeful/productive? Why or why not?

CIVIL MILITARY OPERATIONS/CIVIL AFFAIRS:¹⁶⁴

18. Did your Bn or individual firing batteries, section, or augments deploy ISO GWOT to perform CA? (If "no", skip to question 23).
19. Was the Bn/Battery (Btry) formally trained to perform CA prior to deployment? Was the training purposeful/productive? Why or why not?
20. Was the Bn/Btry afforded the opportunity to conduct CA during MV or equivalent? Was the evolution purposeful/productive? Why or why not?
21. Were your Marines properly prepared to perform CA prior to their deployment?
22. What training deficiencies, specific to CA, did your Marines possess prior to deploying? (Skip to Question 25).
23. Did your Bn conduct CMO/CA training while you were in command? (If "yes", please detail; If "no", please explain why).
24. Did your Bn or members within receive any formal education IRT CMO/CA while you were in command? (If "yes", please detail; If "no", please explain why).
25. Did your Bn possess a CA/CMO SOP while you were in command? (If "yes", please detail; If "no", please explain why).
26. What is the difference between CMO and CA?
27. In your opinion, can artillery battalions realistically perform CMO as an additional tactical mission? Why or why not?

28. In your opinion, can an artillery Bn realistically perform CA as an additional tactical mission? Why or why not?

INFORMATION OPERATIONS

29. Did your Bn deploy sections (FSCCs) or individual augments deploy ISO GWOT to perform IO? (If not, skip to Question 34).

30. Were those Marines(s) formally trained to perform IO prior to deployment?

31. Were those Marine(s) evaluated as IO personnel during MV or an equivalent Block III/IV pre-deployment training venue?

32. Were your Marines properly prepared to perform IO prior to their deployment? Why or why not?

33. What training deficiencies, specific to IO, did your Marines possess prior to deploying?

34. As a Bn, have you conducted internal IO training?

35. If "yes", was the training package an isolated training evolution or a sustained, building-block training package?

36. Who served as the instructor-cadre ISO the IO training for your Battalion?

37. Were you able to send any Marines to formal IO schools?

38. Did this create a train-the-trainer IO capability within your Bn?

QUESTIONS PERTAINING TO 14th MARINES

39. What tactical advantage would your Bn have gained by having one additional firing battery (sourced from 14th Marines)?

40. What capabilities would your Bn have gained by augmenting your Bn Staff with reserve component (SMCR or IRR) Marines?

41. Would your Bn have been better prepared to perform IO or CA missions with reserve component (SMCR or IRR) Marines attached to your command?

42. If your Bn were augmented with SMCR personnel at a "remote site" (greater than 100 miles for your garrison Bn CP), what training/resource/support concerns would you have encountered?

43. In your opinion, would the tactical/warfighting advantages (your answers to Questions 37, 38, and 39) outweigh the support challenges (your answers to Questions 39) if 14th Marines personnel were integrated into active duty artillery Bns?

MISCELLANEOUS QUESTIONS

44. Should FAOBC¹⁶⁵ better prepare inbound LTs to perform IO? Why or why not?

45. Should FAOBC better prepare inbound LTs to perform CA/CMO? Why or why not?

46. Should FACCC better prepare inbound Capt's to perform IO? Why or why not?

47. Should FACCC better prepare inbound Capt's to perform CA/CMO? Why or why not?

48. As we look to the future of our community, should 0802s be required/expected to serve in a non-lethal (IO, CMO/CA, or even PSYOP) billet, assignment, or tour during his career?

49. As we look to the future of our community, should 0802s be required/expected to serve in a non-lethal (IO, CMO/CA, or even PSYOP) billet, assignment, or tour prior to assuming command of a Battalion?

50. What is Effects-Based Operations (EBO)? Does the Marine Corps currently perform EBO?

APPENDIX L

**SUBJECT MATTER EXPERT SURVEY: INFANTRY BATTALION
COMMANDER/STAFF**

BACKGROUND/DEMOGRAPHICS¹⁶⁶

1. Please identify your previous assignments (start with current billet):

<i>Unit</i>	<i>Location</i>	<i>Billet</i>	<i>Start/End Date</i>

2. Did you serve as an infantry battalion (Bn) commander ISO a GWOT deployment?
3. When in command, did you have an artillery officer assigned as your artillery liaison officer (LNO)?
4. When in command, were you also provided a full complement of artillery officers to serve as your forward observers (FO's)?
5. Did your artillery officers perform their doctrinal mission in support of your Bn?
6. Did your artillery officers serve as your Information Operations (IO) Staff Officer? (If "no", skip to Question 18).
7. Did your artillery officer(s) receive formal IO training prior to or during his service as part of your Bn?
8. Did he receive formal IO education prior to or during his service with your Bn?
9. Were there any skills, specific to his artillery education/training/experience, that you felt enabled your artillery officer in the performance of his IO responsibilities?
10. In what ways was he able to effectively coordinate/support IO ISO your Bn?
11. In what ways was he able to effectively support the deliberate/rapid planning process as an "IO expert"?
12. In what ways was he able to effectively serve within a Bn/Company "targeting board" as an "IO expert"?

13. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic IO responsibilities concurrently in support of sustained combat operations?
14. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic IO responsibilities concurrently in support of COIN?
15. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic IO responsibilities concurrently in support of Phase IV operations?
16. What training, education, or overall IO-related performance deficiencies did he possess?
17. Do you envision artillery officers continuing to fulfill IO responsibilities for infantry Battalions/Companies? If "no", was this a GWOT anomaly? Why or why not?
18. Did your artillery officers serve as your Civil Affairs (CA) Officer or Civil Military Operations (CMO) Officer? (if "no", please skip to Question 30).
19. What is the difference between CA and CMO? If there is a difference, did your BN perform CA and/or CMO during your GWOT deployment?
20. Did he (your artillery officer or artillery officers) receive formal CA/CMO Training prior to or during his service as part of your Battalion?
21. Were there any skills, specific to his artillery education/training/experience, that you felt enabled your artillery officer in the performance of his CA/CMO responsibilities?
22. In what ways was he able to effectively coordinate/support CA/CMO within your Battalion?
23. In what ways was he able to effectively support the deliberate/rapid planning process as a "CA/CMO expert"?
24. In what ways was he able to effectively serve within a Bn/Company "targeting board" as a "CA/CMO expert"?
25. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic CA/CMO responsibilities concurrently in support of sustained combat operations?
26. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic CA/CMO responsibilities concurrently in support of COIN?
27. Was your artillery officer capable of performing his kinetic (LNO/FO) responsibilities and his non-kinetic CA/CMO responsibilities concurrently in support of Phase IV operations?
28. What training, education, or overall CA/CMO-related performance deficiencies did he possess?

29. Do you envision artillery officers continuing to fulfill CA/CMO responsibilities for infantry Bns/Companies in the future? If "no", was this a GWOT anomaly? Why or why not?
30. Did you have a PSYOP officer attached to your command? (If "no", please skip to Question 33)
31. In hindsight, did your command require a PSYOP capability, or was your PYSOP personnel a luxury? Why?
32. Does the Marine Corps need an organic PSYOP capability at the Bn-level? Why or why not? Company-level? Why or why not?
33. During your GWOT deployment, to what level (squad, section, platoon, company) was your Battalion conducting sustained, semi-independent (distributed) operations?
34. Based on your distribution of forces and assigned missions, in hindsight, did your BNs/Companies have enough artillery officers to perform lethal fire support missions?
35. If not, what were your realistic requirements?
36. Based on your distribution of forces and assigned missions, in hindsight, did your BN/Companies have enough IO staff officers?
37. If not, what were your realistic requirements?
38. Based on your distribution of forces and assigned missions, in hindsight, did your BN/Companies have enough CA/CMO officers?
39. If not, what were your realistic requirements?
40. Based on your distribution of forces and assigned missions, in hindsight, did your BN/Companies have enough PSYOP officers?
41. If not, what were your realistic requirements?
42. If not already covered in the previous questions, what tactical tasks will future infantry battalions and companies require the artillery community, and specifically, artillery officers to perform? Why?
43. How would you define Effects-Based Operations (EBO)? Did your Bn/Companies perform EBO during your GWOT deployment?

APPENDIX M

SUBJECT MATTER EXPERT SURVEY: ARTILLERY: BATTERY-LEVEL OFFICER

BACKGROUND/DEMOGRAPHICS

1. Please identify your previous assignments (start with current billet):

<i>Unit</i>	<i>Location</i>	<i>Billet</i>	<i>Start/End Date</i>

- 2. Do you possess an AMOS (0510) Information Operations (IO) Staff Officer?
- 3. Have you served as an IO Staff Officer?
- 4. Have you received any formal training in IO?
- 5. Do you possess an AMOS (0530) as a Civil Affairs (CA) Officer?
- 6. Have you served as a CA Officer?
- 7. Have you received any formal training in CA or Civil Military Operations (CMO)?
- 8. Do you possess an AMOS (0520) as a PSYOP Officer?
- 9. Have you served as a PSYOP Officer?
- 10. Have you received any formal training in PSYOP?

QUESTIONS FOCUSED ON YOUR CURRENT/LAST BATTERY:

- 11. Did your battery (Btry) deploy ISO GWOT (If "no", skip to question 18)
- 12. Did your Btry perform a traditional artillery mission? (If "no", skip to question 15)
- 13. If so, did your Btry conduct a T&R evaluation prior to deploying? Was the evaluation purposeful/productive? Why or why not?
- 14. If so, did your battery conduct a Mojave Viper (MV) or equivalent training event? Was the evolution purposeful/productive? Why or why not? (Skip to question 18)

15. If your Btry did not fulfill an artillery tactical mission ISO during its GWOT deployment, what was your Battalion's (Bn's) mission? (Prov Inf, TFMP, CA, etc) (Skip to question 18 if this question does not apply).
16. If your Btry conduct a T&R evaluation prior to deploying? Was the evaluation purposeful/productive? Why or why not?
17. If so, did your Btry conduct a MV or equivalent training event? Was the evaluation purposeful/productive? Why or why not?

CIVIL MILITARY OPERATIONS/CIVIL AFFAIRS

18. Did your Btry or individual firing batteries, section, or augments deploy ISO GWOT to perform CA? (If "no", skip to question 23).
19. Was the Btry formally trained to perform CA prior to deployment? Was the training purposeful/productive? Why or why not?
20. Was the Btry afforded the opportunity to conduct CA during MV or equivalent? Was the evolution purposeful/productive? Why or why not?
21. Were your Marines properly prepared to perform CA prior to their deployment?
22. What training deficiencies, specific to CA, did your Marines possess prior to deploying? (Skip to Question 25).
23. Did your Btry conduct CMO/CA training while you were in command? (If "yes", please detail; If "no", please explain why).
24. Did your Btry or members within your Btry receive any formal education IRT CMO/CA while you were in command? (If "yes", please detail; If "no", please explain why).
25. Did your Bn possess a CA/CMO SOP while you were in command? (If "yes", please detail; If "no", please explain why).
26. What is the difference between CMO and CA?

INFORMATION OPERATIONS:

27. Did your Btry deploy sections (FO Teams) or individual augments deploy ISO GWOT to perform IO? (If not, skip to Question 34).
28. Were those Marines(s) formally trained to perform IO prior to deployment?
29. Were those Marine(s) evaluated as IO personnel during MVr or an equivalent Block III/IV pre-deployment training venue?

30. Were your Marines properly prepared to perform IO prior to their deployment? Why or why not?
31. What training deficiencies, specific to IO, did your Marines possess prior to deploying?
32. As a Btry, have you conducted internal IO training?
33. If "yes", was the training package an isolated training evolution or a sustained, building-block training package?
34. Who served as the instructor-cadre ISO the IO training for your Btry?
35. Were you able to send any Marines to formal IO schools?
36. Did this create a train-the-trainer IO capability within your Btry?

MISCELLANEOUS QUESTIONS:

37. Should FAOBC better prepare inbound LTs to perform IO? Why or why not?
38. Should FAOBC better prepare inbound LTs to perform CA/CMO? Why or why not?
39. Should FACCC better prepare inbound Capt's to perform IO? Why or why not?
40. Should FACCC better prepare inbound Capt's to perform CA/CMO? Why or why not?
41. As we look to the future of our community, should 0802s be required/expected to serve in a non-lethal (IO, CMO/CA, or even PSYOP) billet, assignment, or tour during his career?
42. As we look to the future of our community, should 0802s be required/expected to serve in a non-lethal (IO, CMO/CA, or even PSYOP) billet, assignment, or tour prior to assuming command of a Bn?
43. What is Effects-Based Operations (EBO)? Does the Marine Corps currently perform EBO?

BIBLIOGRAPHY

Primary Sources

Doctrinal Publications:

Doctrinal Publications were utilized to verify and validate mission statements, mission essential task list (METLs), and the core competencies associated with the field artillery, civil military operations (CMO), civil affairs (CA), and information operations (IO).

Artillery Operations, Marine Corps Warfighting Publication 3-16.1, United States Marine Corps, 29 May 2002.

Field Manual (FM) 40. *Civil Affairs Operations*. Headquarters, Department of the Army, Washington D.C., September 29, 2006.

Headquarters, Department of the Army. "Joint Civil Affairs Operations and Joint Civil Military Operations Planning Guide." GTA 41-01-004, September 2007.

Headquarters, Department of the Army. *Psychological Operations Leaders Planning Guide*. Vol. GTA-01-001 November 2005.

Joint Publication 3-13, *Information Operations*, 13 February 2006.

NAVMC 3500.7, *Artillery Training and Readiness Manual (Short Title: Artillery T&R Manual)*, Headquarters, United States Marine Corps, 2007.

Orders and Directives:

The first two directives identified below were used to compare the training, required skills sets, and then the individual training standard (ITS) tasks-conditions-standards between the artillery community and the non-lethal skill sets. The third directive was useful to determine the framework and methodology by which the Marine Corps expeditionary forces of the future are designed and developed. The last item below, the draft MCO, provided keen insight into the stand-up and employment plans of the Marine Corps Information Operations Center (MCOIC).

Headquarters, United States Marine Corps. *NAVMC 3500.22: Civil Affairs Training and Readiness Manual (Short Title: Civil Affairs T&R Manual)*, 2007.

Headquarters, United States Marine Corps. *NAVMC Dir 3500.85: Information Operations Planners Training and Readiness Manual (Short Title: I/O Planners T&R)* 2006.

MCO 3900.15A, *Marine Corps Expeditionary Force Development System*, Headquarters United States Marine Corps: Washington, D.C., November 26, 2002.

MCO XXXX (Draft) - Mission, Functions, and Tasks of the Marine Corps Information Operations Center (Short Title: MCOIC)," Headquarters, United States Marine Corps. Quantico, VA: September 17, 2007 (accessed December 16, 2007).

Mission Essential Task Lists:

In support of the detailed research required to support this argument and to develop Appendices H and I in detail, the below mission essential task lists (METLs) were review.

"Mission Essential Task List (METL): Artillery Regiment." Training and Education Command, Marine Corps Combat Development Command.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007).

"Mission Essential Task List (METL): Artillery Battalion (Cannon)." Training and Education Command, Marine Corps Combat Development Command.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007).

"Mission Essential Task List: Headquarters Battery Regiment." Training and Education Command, Marine Corps Combat Development Command, United States Marine Corps.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007).

Tables of Organization and Equipment (TO/E):

Tables of Organization were scrutinized to determine the realistic capability and capacity to assume and then conduct non-lethal missions independent of and then simultaneous to the artillery's primary lethal mission.

"Table of Organization 1113G, Artillery Battery," February 12, 2004.

"Table of Organization 1142G, Artillery Battalion," February 12, 2004.

"Table of Organization, 1101H, Headquarters Battery, Artillery Regiment," February 12, 2004.

ALMARS and MARADMINS:

The first ALMAR identified below was used along with the MOS Roadmap to shape Appendix J. The second ALMAR was examined to evaluate the source and scope of the December 2005 assignment of the CMO task to artillery regimental and battalion headquarters.

ALMAR 007/05: *Marine Corps Professional Reading Program*, February 8, 2005,
<http://www.usmc.mil/almars/anmar2000.nsf/0/aa2cb37ddee25a2785256fa20073e625?OpenDocument> (accessed January 6, 2008).

ALMAR 061/05: *Assignment of Secondary Civil-Military Operations Mission to Artillery Regiments*,
<http://www.usmc.mil/almars/anmar2000.nsf/0/aa2cb37ddee25a2785256fa20073e625?OpenDocument> (accessed December 5, 2007)

Naval Messages and other Official Correspondence:

The two naval messages below outlined the scope and then findings of a MCCDC-sponsored CMO conference in January 2008. The Conference was actively participated by CMO-experts and artillery-advocates and developed the framework for a CMO-roadmap.

CMC Washington DC CDI FMID (uc), NAVMSG DTG R 200553Z DEC 07, "Announcement of MCCDC Civil-Military Operations Conference."

CMC Washington DC CDI FMID (uc), NAVMSG DTG W 231011Z DEC 07, "Results of MCCDC Civil-Military Operations Conference"

Information Papers:

The majority of the information papers identified below were critical to the development of the non-lethal themes and transformation proposals presented as part of this argument.

Anthis, Jennifer and Douglas Nash. "Notes from Interview with Col John Koenig, Commander, 14th Marines." Quantico, VA: Civil Military Operations Branch, SCETC, October 16, 2007.

Basic Fire Support Branch and Gunnery Department, Marine Corps Detachment, Fort Sill.
"MOABC 7-07 Training Schedule." Fort Sill, Oklahoma (accessed December 18, 2007).

Basic Fire Support Branch and Gunnery Department, Marine Corps Detachment, Fort Sill.
"Officer Instructor Group (OIG): Basic Officer Leader Course (BOLC-III)." Fort Sill, OK, January 2008, December 2006 (accessed December 18, 2007).

"Distributed Operations." *Warfighting Concepts: Emerging & Enabling Capabilities* (15 March 2005).

Information Operations and Space Integration (PLI). "Marine Corps Information Operations," Headquarters, United States Marine Corps, August 2007.

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Effects Based Approach to Joint Operations." In *Thoughts on the Operational Art*, 72-75. Quantico, Virginia: Marine Corps Warfighting Lab, Marine Corps Combat Development Center, United States Marine Corps, October 2006.

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Montgomery, Gary W. "Information Paper: U. S. Marine Corps (USMC) Civil Affairs (CA) Capabilities." <https://www.mccdc.usmc.mil>. (accessed December 21, 2007).

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Power Point/VIP Briefs:

Similar to the information papers identified above, the formal briefing/presentations identified below similarly provided invaluable insight in respect to the current initiatives and concepts that the Marine Corps is currently developing. The information below is "real-time" and could not have been located or captured in secondary sources.

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Marine Corps Combat Development Command. "Agenda: MCCDC Civil-Military Operations Conference, January 16-17, 2008." Quantico, Virginia: Headquarters Marine Corps, January 2008.

Marine Corps Systems Command: Expeditionary Fire Support Program Manager Brief, *Expeditionary Fire Support System*, Quantico, Virginia, January 30, 2008.

McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," Camp Pendleton, CA., October 17, 2006.

Nash, Douglas, "Current U.S Army Civil Affairs Courses," SCETC/TECOM, Quantico, VA: 2007.

Plans Policies and Operations. *Marine Corps Information Operations*. Quantico, Virginia: Headquarters Marine Corps, 2006.

Rios, Mitch. "Marine Corps Information Operations Center: Marine Corps University IO Elective Course: February 2008," Information Operations & Space Integration (PLI), Headquarters, U.S. Marine Corps, published January 18, 2008.

Strobl, Michael R., "Officer Assignments MMOA", MMOA-5: Quantico, Virginia, February 8, 2006.

United States Army. "37A and 37F: Psychological Operations Training Pipeline." U.S. Army John F. Kennedy Special Warfare Center and School. www.arsofu.army.mil (accessed December 16, 2007).

United States Army. "38A and 38B Civil Affairs Training Pipeline." U.S. Army John F. Kennedy Special Warfare Center and School. www.assofu.army.mil (December 19, 2007).

United States Army. "CA Recruiting Website: Requirements and Application for CA." <http://www.bragg.army.mil/ca/> (accessed December 19, 2007).

Formal or Official Documentation:

The first source below was used to educate the author of the Marine Corps' Operational Advisory Group's role, responsibilities, and functions. The two other sources below, General Conway's and General Krulak's Commandant's Planning Guidance documents, were tightly interwoven into the "Operating Environment" portion of this paper.

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Conway, James T. "34th Commandant of the Marine Corps: Commandant's Planning Guidance," Headquarters, United States Marine Corps: Washington D.C.: 2006. <http://www.proquest.com/>. (accessed December 15, 2007).

Krulak, Charles C. "Commandant's Planning Guidance." Headquarters, United States Marine Corps: Washington D.C.: August 1995. <http://www.proquest.com/>. (accessed December 1, 2007).

E-mail Correspondence:

Specific information, vital to the construct of this paper, were not contained within formal writings nor captured as part of formal interviews or questionnaires. They took the shape of e-mail dialogue. Lieutenant Colonel Feiring is one of the Marine Corps' lead agents regarding manpower and manpower planning. Colonel Gentry served as a Division-level Fire Support Coordinator during OIF 2.1, the Executive Officer of a Regimental Combat Team during OIF 2.2, and recently served as an artillery battalion commander within 11th Marines. LtCol McCarthy relieved Colonel Gentry as the Fire Support Coordinator at 1st Marine Division during OIF 2.2 and currently is a 10th Marines Battalion Commander, preparing for an OIF deployment, performing an in-lieu-of mission).

Feiring, Douglass I. *E-Mail Correspondence regarding MOS 0802 and Assignment of AMOS's.* December 23, 2007 and January 3, 2008.

Feiring, Douglass I. *E-Mail Correspondence regarding the 1 Oct 08 Forecast for 0802 End Strength.* December 13, 2007.

Gentry, Kyle. *E-mail Correspondence regarding Artillery Battalion Command and Employment of Artillerymen in support of OIF.* December 28, 2007.

McCarthy, Michael A. *E-mail Correspondence regarding Artillery Battalion Command, Pre-Deployment Training, and Artillery Civil Military Operations.* December 29, 2008.

Subject Matter Expert Interviews:

The following individuals were gracious with the time, efforts, and commentary – their input, along with the Subject Matter Expert Surveys outlined further below in the bibliography text, serve as the backbone of this paper’s research efforts. The annotated title of each interview reflects the individual’s field of expertise and the general nature of the interview subject-matter. Each individual below has recently and/or currently serves in an official billet directly tied to the scope of this argument. More importantly, each individual below has fifteen-plus years of experience as Marines and/or serving the Marine Corps or United States Army and are highly regarded professionally.

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Kesterton, John. *Subject Matter Expert Interview: Training and Education..* Quantico, VA: December 19, 2007.

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Lagore, Albert. *Subject Matter Expert Interview: Marine Corps Artillery and MCCDC Integration Efforts.* Quantico, VA: October 19, 2007, November 18, 2007, and December 18, 2007.

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Simmons, Alexander H. *Subject Matter Expert Interview: Army PSYOP and PSYOP Branch*, December 20, 2007 and January 6, 2008. (telephonic).

Swope, Jonathan. *Subject Matter Expert Interview: HIMARS, EFSS, and the Program Manager Process*. Quantico, VA: December 17, 2007.

Tull, Mark M. *Subject Matter Expert Interview: Artillery Battalion Command*. Quantico, VA: November 20, 2007. (telephonic).

Subject Matter Expert Surveys:

As discussed in Appendix G, this paper's research efforts were also largely dependent upon input from Subject Matter Expert Surveys. As a condition of the survey, the anonymity of the survey participants are protected in order to foster an environment of free-expression and open-dialogue. Over 210 surveys were sent out to three different target audiences; over 90 of these surveys were returned with invaluable insight. The first target audience was artillery battalion commanders or artillery field grade officers who have served as primary staff members of an artillery battalion. All of these survey participants have between 10 and 25 years of experience (active duty and reserve component) and have recent experience on an artillery battalion staff in support of the Global War on Terror. The survey is identified as the first document below and is contained in Appendix K. The second target audience was the infantrymen. Infantry battalion commanders and primary staff officers with similar rank, billet, and experience parameters as outlined above for the artillerymen were surveyed. The survey itself is identified as the third document below and is contained in Appendix L. Finally, battery-level artillery officers (company grade officers from Second Lieutenant to Captain) were surveyed. The survey itself is identified as the second resource below and is contained in Appendix M.

Dunne, Jonathan P, "Subject Matter Expert Survey: Artillery Battalion Commander/Staff," Quantico, VA: December 2007.

Dunne, Jonathan P, "Subject Matter Expert Survey: Artillery – Battery-Level Officer," Quantico, VA: December 2007.

Dunne, Jonathan P, "Subject Matter Expert Survey: Infantry Battalion Commander/Staff,"
Quantico, VA: December 2007.

MOS Roadmaps:

MOS roadmaps pulled from the TECOM website were utilized to construct Appendix J. Of note, MOS roadmaps do not exist for commissioned ranks, nor have they yet been designed for non-lethal enlisted specialists.

Training and Education Command. *MOS Roadmap: 0844 - Marine Artillery Fire Control Man/Marine Artillery Surveyor*. Quantico, Virginia: Headquarters Marine Corps, April 9, 2005. <https://www.tecom.usmc.mil>. (accessed December 15, 2007).

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Secondary Sources

Books:

The following books were used for general background information, particularly at the onset of this paper's design. Of note, Dr. Strong's text was used to aid in the construct of this Transformation argument (refer to Appendix G). Machiavelli's and Montagu's books were evaluated and ultimately included as recommended additions to the MOS Roadmap as outlined in Appendix J.

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ENDNOTES

¹ Subject matter expert (SME) interview conducted 19 Dec 07, reinforced by formal surveys from over 80 active duty and reserve Marines, conducted in December 2007 and January 2008.

² Subject matter expert (SME) surveys conducted in December 2007. Compiled as of January 8, 2008, of the 63 artillery officers who specifically responded to the appropriate line of questioning, nearly 85% had OIF/OEF experience, and over 75% had experience performing the "ILO" missions as identified in the primary text.

³ For the purposes of this examination, "force structure" is restricted to those issues pertaining to organizational structure, personnel, and personnel training, education, and overall capabilities. Within this context, "force structure" does not include equipment sets or technology capabilities.

⁴ Hoffman, Frank G. "Preparing for Hybrid Wars." *Marine Corps Gazette* 91, no. 3 (March 2007): 57-61. <http://www.proquest.com/>. (accessed October 19, 2007). LtCol Hoffman USMC(Ret), currently serves as the Director of the Strategic Studies Group, Marine Corps Combat Development Command, in Quantico, Virginia. Mr. Hoffman supports a concept referred to as "Hybrid Warfare." This concept proposes that future warfare will span across or encompass four separate spectrums of thresholds of warfare – traditional, irregular, disruptive, and catastrophic. While Mr. Hoffman does not reject the concept or probability of state-on-state future conflict, the hybrid war concept embraces that non-state actors will operate within current strategic seams, conducting a blend of traditional, irregular, disruptive, and/or catastrophic tactics and techniques against nation-states.

⁵ Mattis, James N. and Frank G. Hoffman. "Future Warfare: The Rise of Hybrid Wars." *Proceedings* 131, no. 11 (November 2005): <http://proquest.umi.com/pqdweb?index=0&did=928877101&SrchMode=1&sid=3&Fmt=3&VIn st=PROD&VType=PQD&RQT=309&VName=PQD&TS=1198172664&clientId=32176> (accessed December 20, 2007). In 2005, then-Lieutenant General Mattis and retired Lieutenant Colonel Hoffman, commanding and serving within MCCDC, respectively, detailed a concept that the two authors refer to as the "four-block war." The concept utilizes "blocks" to represent the increasingly common trend military operations occurring within an urban confines' city blocks. This four-block construct outlines the first block as the conduct of combat operations on one block, humanitarian assistance operations on the next block, tactical diplomacy on a third block, and a fourth block encompassing psychological and information operations. These separate actions, spanning the full range of military operations, would be conducted simultaneously and efficiently at the small-unit level.

⁶ Krulak, Charles C. "The Strategic Corporal: Leadership in the Three Block War." *Marines Magazine* (January 1999, January 1999): 27-32. http://www.au.af.mil/au/awc/awcgate/usmc/strategic_corporal.htm (accessed December 20, 2007). General Krulak coined the term "three block war" to describe the complex spectrum of challenges likely to be faced by Marines on the modern battlefield. In three contiguous city blocks, Marines will be required to conduct full scale military action, peacekeeping operations and humanitarian relief efforts. In this particular article, General Krulak highlights this three-

block war as the current and future battlefield that Marines will encounter, requiring junior leaders (“strategic corporals”) to demonstrate keen capabilities, adaptability, and judgment in their performance of duties.

⁷ Government Accountability Office. "GAO-07-500CG, DOD Transformation Challenges and Opportunities." <http://www.google.com/search?q=GAO-07-500CG,+DOD+Transformation+Challenges+and+Opportunities+...&hl=en&lr=&client=firefox-a&sa=G> (accessed December 1, 2007). 2 and 21.

⁸ Jones, James L. "Fixing the Marine Artillery." *Field Artillery: A Professional Bulletin for Redlegs* HQDA PB6-00-5, (September-October 2000, 2000): 3-5. (accessed 6 November, 2007). This article appeared in the Fort Sill-sponsored *Field Artillery Journal* as an interview with General Jones. The M198 was viewed as being too limited and antiquated to fully support the infantry on the modern battlefield – specifically, the M198 lacked the range, accuracy, lethality, and maneuverability/mobility to support the infantry within an expanding battlespace. This article summarizes then-Commandant General Jones’ desire to modernize the artillery community. The concept it commonly referred to as the “Triad of Ground Fires” or the “Artillery Triad.”

⁹ ALMAR 061/05 dated 5 Dec 05. Signed by then-Commandant General Michael W. Hagee, ALMAR 061/05 assigns active and reserve component artillery regiments/battalions with the additional mission of Civil Military Operations (CMO). This ALMAR and resulting tasking does not apply to HIMARS-designated units. The ALMAR declares that artillery units are to be staffed and trained to lead CMO within a Marine division’s battlespace. The ALMAR’s specified tasks include the establishment and operation of the division’s civil military operations center (CMOC), and service as the primary executor of CMO. This second task includes the establishment, maintenance, influence, and/or exploitation of military forces, government and civilian organizations, and indigenous populations in support of the Division.

¹⁰ Montgomery, “Information Paper: U.S. Marine Corps (USMC) Civil Affairs (CA) Capabilities,” 3. LtCol Montgomery outlines the structure of 3rd and 4th Civil Affairs Groups (CAGs). He then further outlines the expansion of CAGs’ Tables of Organization (T/Os) and also the inclusion of CA Marines within the artillery community T/O. Highlighted throughout the text is the general shortfall of CA personnel, particularly as post-decisive operations continue in Iraq and Afghanistan. The author attributes the current USMC CA shortages to the Marine Corps’ post Vietnam focus on five kinetic warfighting core competencies and its necessity to maintain a general purpose vice specialty force.

¹¹ Subject matter expert (SME) interview conducted December 2007.

¹² Subject matter expert (SME) interview conducted December 2007.

¹³ Conway, James T. "34th Commandant of the Marine Corps: Commandant's Planning Guidance," Headquarters, United States Marine Corps: Washington D.C.: 2006. <http://www.proquest.com/>. (accessed December 15, 2007), iii-v.

¹⁴ *Artillery Operations*, Marine Corps Warfighting Publication 3-16.1, United States Marine Corps, 29 May 2002., 17. *Artillery Operations* outlines the tactical tasks that artillery battalions perform: direct support (DS), general support (GS), reinforcing (R), and general support reinforcing (GSR). While it is arguable that these tactical tasks have historically been performed at units or task organizations below the artillery battalion, the fact remains that current doctrine recognizes that Marine Corps artillery, first and foremost, must retain its lethal, tactical capabilities.

¹⁵ Conway, 34th *Commandant of the Marine Corps: Commandant's Planning Guidance*, 5.

¹⁶ Subject matter expert (SME) Interview dated December 2007.

¹⁷ MCRP 5-12A, *Operational Terms and Graphics*, 1-30 & 1-31.

¹⁸ ALMAR 061/05. The ALMAR states that "the reserve component CAG will produce CA personnel to the artillery regimental headquarters and cannon battalions through coded table of organization (T/O) line numbers mapped to specific T/O line numbers in the designated supported artillery unit." As will be discussed later in this research paper, this "mapping" technique has been problematic, further underlining the need to develop further organic CMO and CA capabilities resident within the artillery community.

¹⁹ Subject matter expert (SME) survey dated December 2007. A total of 13 Marine Officers, all members of artillery battalions with CMO missions in support of OIF, were surveyed. Specifically, these Marines either deployed with 5th Battalion, 10th Marines in support of OIF 6.8 or are members of 2nd Battalion, 11th Marines, preparing for a winter 2008 deployment as a CMO-battalion.

²⁰ Feiring, Douglass I. *E-Mail Correspondence regarding MOS 0802 and Assignment of AMOS's*. December 23, 2007 and January 3, 2008. Feiring, "Rank and MOS study," January 2008. LtCol Feiring currently works for HQMC as a manpower plans officer. Research that he conducted during December 2007 and then released on January 2, 2008, indicated that of the 805 artillery officers of ranks 2nd Lt through LtCol, only 6 possessed an additional military occupational specialty (AMOS) 0530, Civil Affairs Officer. A similar study was conducted, focused on enlisted ranks for enlisted artillery Marines (SSgts and GySgts, MOS 0811, 0848, and 0861); this population, too, generated a list of AMOS 0531s that reflected less than 1% of the studied population. While application of an AMOS is often contingent on the initiative and desire of the individual Marine to apply for such a designation, such a small percentage of officers who are deemed as qualified CMO officers is much more indicative of a lack of formal education and training opportunities. This is of particular concern, as three-years have expired since the release of ALMAR 061/05 and the Marine Corps continues to conduct CMO-dependent COIN operations in Iraq and Afghanistan.

²¹ Subject matter expert (SME) interview dated December 2007. During the interview, the SME indicated that while the United States Army and United States Navy both have established, mature CMO formal schools, the schools lack the capacity to support a surge of U.S. Marines. Additionally, the schools are not focused on Marine-specific CMO combat tasks.

²² Table of Organization, 1101H, Headquarters Battery, Artillery Regiment, 12 Feb 2004. The T/O of an artillery regimental headquarters is designed to support an Artillery Training School (ATS). ATS serves as an organic formal schooling capability, enabling regimental commanders to formally train their Marines locally. Ideally, ATS can be expanded to provide regimental commanders with an embedded CMO train-the-trainer capability. Due to the lack of CMO experts within the Marine Corps, and specifically within artillery regiments, the Marine Corps artillery has not been able to create an organic CMO-training capability.

²³ Anthis, Jennifer and Douglas Nash. "Notes from Interview with Col John Koenig, Commander, 14th Marines." Quantico, VA: Civil Military Operations Branch, SCETC, October 16, 2007., 1-9. Maj Jennifer Anthis and Mr. Douglas Nash prepared these notes while working in the Civil-Military Operations Branch, Security Cooperation Education and Training Center (SCETC), Quantico, Virginia. The interview with Col Koenig was conducted in October 2007, following his most recent deployment to Iraq. Col Koenig served as the former II MEF (FWD) Assistant Chief of Staff / G5 for Governance, Economic Development, Civil Affairs, and Rule of Law from July 2006 to July 2007. Col Koenig's staff section was responsible for the Multinational Force West (MNF-W) or II MEF (FWD) for Governance, Economic Development, Civil Affairs, Reconstruction and Rule of Law lines of operation (LOOs) for the area of operations encompassing Al Anbar Province. Much of Koenig's comments centered on a number of command-and-control and command relationship challenges that he faced during the deployment.

²⁴ CMC Washington DC CDI FMID (uc), NAVMSG DTG W 231011Z DEC 07, "Results of MCCDC Civil-Military Operations Conference," 2.

²⁵ MCCDC CMO Conference, "Agenda: MCCDC Civil-Military Operations Conference, January 16-17, 2008." This document was made available as a read-ahead for all Conference attendees.

²⁶ CMC Washington DC CDI FMID (uc), NAVMSG DTG W 231011Z DEC 07, "Results of MCCDC Civil-Military Operations Conference," 2-3.

²⁷ Internet, *TECOM G3 Operations Core Mission Essential Task List: Artillery Regiment*, 1. This CMO Mission Essential Task has been adopted by the artillery community, as depicted in an 11th Marines capabilities brief presented to the then-Commanding General Major General Paxton on October 17, 2006.

²⁸ MCCDC, "CMO Primer: MCCDC Civil-Military Operations Conference: Quantico, Virginia, 16-17 Jan 2008", 4. This document was provided by MCCDC as part of the Read-Ahead for the Marine Corps January 2008 CMO Conference. The nine functional areas of CMO were extracted by Joint, U.S. Army, and Marine Corps doctrine and then highlighted as part of the Conference Orientation. It is the opinion of the researcher that while these nine functional areas are the core competencies of CMO, the Marine Corps, to include the CAG and artillery communities, are not properly translating these functional areas into mission and mission essential tasks. This deficiency creates inadequate formal training and ultimately fails to prepare Marines to perform the CMO functional areas.

²⁹ Anthis and Nash, “Notes from interview with Col John Koenig, Commander, 14th Marines”, 1-4. As part of the interview with Colonel Koenig, Major Anthis and Mr. Nash indicate that “Col Koenig’s G5 Staff was organized while still at Camp Lejeune into three sections: Governance, Economics, and Operations.” Upon further review of the interview’s documentation, Colonel Koenig’s staff’s organization along these three lines of organization allowed II MEF FWD (MNF-W) to orchestrate CMO along the nine doctrinal functional areas outlined in this examination.

³⁰ Subject matter expert (SME) surveys conducted in December 2007, reinforced during two separate SME interviews, conducted December 19 and December 21, 2007. While the survey data does not reflect any consensus of *how* the Marine Corps will better perform CMO in support of contemporary or future conflict, 63 of the 77 Marines who commented regarding CMO agreed that CMO capacity within the Marine Corps must become more robust.

³¹ Internet, *Roadmap for MOS 0848 Marine Artillery Operations Chief*, 1-20.

³² Of note, the MOS 0848 for Field Artillery Operations Chief is limited to the ranks of Staff Sergeant through Master Gunnery Sergeant. There are three separate feeder MOSs, ranks private through sergeant, that channel into MOS 0848. These three feeder MOSs are MOS 0842 Marine Artillery Radar Operator, MOS 0844 Marine Artillery Fire Controlman, and MOS 0847 Marine Artillery Meteorological Specialist.

³³ NAVMC 3500.7, *Artillery Training and Readiness Manual (Short Title: Artillery T&R Manual)*. The artillery T&R Manual “establishes the Core Capability Mission Essential Tasks for readiness reporting and required events for standardization training of Marines and Navy personnel assigned to the Marine Corps (artillery units)” (p. 1). Chapter 3 of the artillery T&R is termed “collective events” and outlines the tasks, conditions, and standards for artillery regiments, battalions, and batteries. Paragraph 3005 outlines the collective tasks for artillery battalions, subdivided by section or functional area. A detailed review of paragraph 3005, and a further, comprehensive review of those tasks/conditions/standards, spanning pages 3-141 through 3-310, reveals a number of tasks performed by artillery Combat Operations Centers (COCs) or Fire Direction Centers (FDCs) that are shared or common tasks with those performed within a Civil Military Operations Center (CMOC) in support of CMO. A supporting argument of this thesis contends that artillery headquarters are largely trained, postured, and prepared to execute the command and control mechanics associated with CMO. Of note, the term “elements” is used to refer to both the echelons of command (regimental, battalion, and battery) and also the applicable, COC-related sections (FDC, intelligence, communications, etc.) as outlined in paragraph 3005.

³⁴ NAVMC 3500.7, *Artillery Training and Readiness Manual (Short Title: Artillery T&R Manual)*. Chapter 4 of the artillery T&R is termed “individual events” and outlines the individual tasks, conditions, and standards for artillerymen. Paragraph 4009 outlines the individual tasks for Marine Artillery Radar Operators MOS 0842, an MOS 0848 feeder. Paragraph 4010 outlines the individual tasks for Marine Artillery Fire Controlmen MOS 0844, another MOS 0848 feeder. Paragraph 4011 outlines the individual tasks for Marine Artillery Meteorological Specialist MOS 0847, yet another feeder for MOS 0848. Finally, paragraph 4012

outlines the individual tasks/conditions/standards for MOS 0848, Marine Artillery Operations Chief. These four paragraphs, particularly the Operations Chief individual events chapter outlines a number of individual tasks that are closely associated with command and control functions associated with a Fire Direction Center (FDC), Combat Operations Center (COC), or related command-and-control functions. These C2-type tasks are shared or common tasks with those performed within a Civil Military Operations Center (CMOC) in support of CMO. A supporting argument of this thesis contends that MOS 0848 and their feeder MOS's are largely trained, postured, and prepared to execute the command and control mechanics associated with CMO.

³⁵ An "MOS Roadmap" assists individual Marines and also senior enlisted Marines (individual Marines' advisors) in a manner similar to a guidance counselor in high school. The Roadmap outlines recommended career paths, training endeavors, educational opportunities, off-duty professional military education, etc., that will enhance the individual Marine's performance and advancement within the Marine Corps. Appendix J provides additional information regarding MOS Roadmaps.

³⁶ Subject matter expert (SME) surveys conducted in December 2007. 62 Marine officers survey representing 11 different artillery battalions, commented in regards to a CMO Standard Operations Procedure (SOP). At the time of the survey, only four of the 11 battalions even possessed an updated and functional SOP. After three years of this assigned mission, it is reasonable to expect that artillery battalions should have drafted, formalized, published, and then incorporated a CMO SOP in concert with the CMO assigned mission.

³⁷ Subject matter expert (SME) interview conducted in December 2007. While active duty artillery regiments are now being resourced with CMO experts, the regiments have opted to employ that expertise and embedded SMEs in support of deploying CMO battalions or detachments. These immediate needs have precluded the regiments from utilizing the CMO experts as part of a long-term, progressive training program within the ATSS.

³⁸ Anthis and Nash, "Notes from interview with Col John Koenig, Commander, 14th Marines", 1-5. Per this reference, "In regards to pre-deployment training, Col Koenig felt that his G5 staff and 5/10 received adequate training from the 4th CAG via MTT's and the Army's CA school given the available time. His staff and CA Detachments were put through a series of thorough pre-deployment training events involving assessments of local infrastructure, visits to schools and attending meetings of local town governments... Visits to local industries that manufactured phosphate, glass and ceramics also provided 5/10 with a solid appreciation of the challenges they would face when they would soon be given the mission of getting the same kind of state-run industries in Iraq up and running again."

³⁹ Subject matter expert (SME) surveys conducted in December 2007. Of the 66 Marine officers that commented regarding battalion-level CMO training, only those members of deploying CMO battalions conducted routine formal training and progressed to advanced skill sets. 12 of the 66 Marines indicated that their battalions had conducted a one-time CMO orientation training package that never progressed beyond introductory material. Another 36 Marines indicated that they have never participated in any internal CMO training within their battalions.

⁴⁰ MCRP 5-12A, *Operational Terms and Graphics*, 1-30.

⁴¹ ALMAR 061/05, "Assignment of Secondary Civil Military Operations Mission to the Artillery Regiments and Battalions," Paragraph 2.

⁴² MCCDC, "CMO Primer: MCCDC Civil-Military Operations Conference: Quantico, Virginia, 16-17 Jan 2008", 4. This document was provided by MCCDC as part of the read-ahead for the Marine Corps' January 2008 CMO Conference. The Corps' use of general purpose forces, as cited as part of the CMO Conference Primer, was utilized by the Conference attendees as planning assumption as CMO development and integration was discussed. This paper's article, per Mr. Hoffman's writings, argues that "general purpose" is a misrepresentation; the forces asked to fulfill artillery skills and also civil military operations are "multi-purpose" forces.

⁴³ ALMAR 061/05, "Assignment of Secondary Civil Military Operations Mission to the Artillery Regiments and Battalions."

⁴⁴ ALMAR 061/05, "Assignment of Secondary Civil Military Operations Mission to the Artillery Regiments and Battalions."

⁴⁵ Subject matter expert (SME) surveys conducted December 2007. Of the 73 officers who commented on requirements for contemporary CA capacity, 57 acknowledged that the Marine Corps requires additional resources to meet the demands of contemporary and future conflict. These figures are reinforced by SME interviews conducted on December 16, 2007 and December 21, 2007. As part of the increase of active duty manpower to 202k, the Marine Corps is gaining 173 additional active duty CMO/CA experts. While the 173 CA Marines are a welcome addition, this initiative will provide depth for CMO planning at the MEF and Division levels as well as a reach-back capability for Expeditionary Commanders. They will not form a robust, embedded, enduring small-unit capability in support of dispersed/distributed forces.

⁴⁶ McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," 20. 11th Marines defines its organic capabilities, in concert with CAG Planners and organic artillery C2 capabilities, to fulfill Security and QRF requirements, transportation assets, IO integration, convoy operations capabilities, and basic engineering and medical capabilities. An additional resource reinforces this argument: Anthis and Nash, "Notes from interview with Col John Koenig, Commander, 14th Marines", 5-6. Col Koenig's comments are summarized: "Success in winning the battalion's argument allowed its CA Detachments and CA Teams to achieve a 'velocity' that a CAG had not previously attained, because reserve CAGs were limited in being able to get 'outside the wire' due to fewer vehicles and personnel to provide security...In direct contrast, the CA Detachments and Teams from 5/10 could self-move and provide their own security, so they had the freedom of action to move on short-notice notice and substantially increase contact events with local Iraqis. This capability allowed them to grow in confidence and achieve a greater level of CMO momentum than had been achieved in the past."

⁴⁷ McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," 14.

⁴⁸ Subject matter expert (SME) surveys conducted December 2007. 22 Marine officers indicated through specific comments that general purpose forces, to include artillerymen, could be provided an “apprenticeship” type training package to develop fundamental skills in carpentry, plumbing, electrical, and welding, skills. These skills, the author contends, correspond to small unit capabilities within the “public works and utilities” functional area.

⁴⁹ Table of Organization 1113G, Artillery Battery, 12 Feb 2004.

⁵⁰ CMC Washington DC CDI FMID (uc), NAVMSG DTG W 231011Z DEC 07, “Results of MCCDC Civil-Military Operations Conference,” 2-3.

⁵¹ OSD IO Roadmap, Oct 2003, p. 11. Note: The supporting and related capabilities that are normally included in discussions of IO are: counter-intelligence, physical attack, physical security, information assurance, public affairs, combat camera, civil-military operations, and defense support to public diplomacy.

⁵² The Marine Corps, the United States Army, and DoD all have different definitions of IO. This problem is not specific to the Department of Defense. The United States Government continues to wrestle conceptually with IO and the overarching concepts of strategic communication and public diplomacy.

⁵³ Metz, Thomas F., Mark W. Garrett, James E. Hutton, and Timothy W. Bush. “Massing Effects in the Information Domain: A Case Study in Aggressive Information Operations.” *Military Review* (May-June 2006): 5. The authors’ experiences, to include those of LTG Metz, call for greater military IO capacity and more effective ability to leverage information operations at the tactical level of war.

⁵⁴ Baker, Ralph O. “The Decisive Weapon: A Brigade Combat Team Commander's Perspective on Information Operations.” *Military Review* (May-June 2006): 31. The author identified successful Information Operations and Human Intelligence efforts as the two critical elements for his BCT’s success in Iraq.

⁵⁵ MCO XXXX (Draft) – “Mission, Functions, and Tasks of the Marine Corps Information Operations Center (Short Title: MCOIC),” Headquarters, United States Marine Corps. Quantico, VA: September 17, 2007 (accessed December 16, 2007), 3.

⁵⁶ HQMC, “Corps to Establish the Marine Corps Information Operations Center (Draft),” 2. This document is a draft press release focused on the establishment of the Marine Corps Information Operations Center (MCOIC). This document was obtained on December 21st, in electronic draft form. The document had an estimated release date of December 30, 2007, pending final review and approval. While it is only a draft, the MCOIC has been approved in concept and a detailed POA&M has been developed. Any modifications applied to this draft document would be specific to document-style and not concept-substance.

⁵⁷ MCCDC, “IO Capabilities POM Breakout”, MCOIC Tab. This electronic document was obtained on December 21, 2007, and is pending final review and approval by HQMC. Similar to a number of the other MCOIC documents, MCOIC is approved in concept and any modifications

to this particular document, per estimates of the interviewed Subject Matter Experts, will be more in detail than in overall construct.

⁵⁸ HQMC, "Corps to Establish the Marine Corps Information Operations Center," 2. This document is only a draft, the MCOIC has been approved in concept and a detailed POA&M has been developed. Any modifications applied to this draft document would be specific to document-style and not concept-substance.

⁵⁹ HQMC, "Corps to Establish the Marine Corps Information Operations Center," 2.

⁶⁰ Rios, Mitch. "Marine Corps Information Operations Center: Marine Corps University IO Elective Course: February 2008," Information Operations & Space Integration (PLI), Headquarters, U.S. Marine Corps, published January 18, 2008. MCOIC's initial structure will include four MCIO (Marine Corps Information Operations) Teams that will fly-away and embed within MEF-level forces, as required.

⁶¹ Subject matter expert (SME) survey completed December 2007 and compiled on 28 December 2007. As part of this paper's research, 52 Marine Corps infantry and artillery officers, all whom had either served or currently serve either as battalion commanders and/or as members of the battalion's primary staff during the Global War on Terrorism, were surveyed. 40 of the 52 indicated that embedded IO capabilities at the infantry-battalion level were a must, and 32 of those 40 noted that possessing that capability at the company level would be beneficial. This particular data suggests that while the capabilities of MCOIC will provide a much-needed and over-arching IO capability, it will not provide the embedded IO capabilities needed by small-unit commanders.

⁶² HQMC NAVMSG, "Ground Board 2-07 Report, paragraph 3E. Posted on 18 December 2007, this message report the results of the 5 Dec Ground Board 2-07. Paragraph 3E of this naval message addresses IO capability at the company through regimental level. The result of Ground Board 2-07, specific to paragraph 3E and Marine Corps Information Operations, directs the Deputy Commandant, Combat Development and Integration (DC CD&I), to conduct a capabilities based assessment (CBA) to determine requirements and limitations to provide embedded IO capabilities for infantry companies, battalions, and regiments.

⁶³ Subject matter expert (SME) interview, dated December 2007. The targeting cycle, D3A, is discussed in both the fire support instruction and gunnery instruction at BOLC III, the Basic Officer Leaders Course III, at Fort Sill, OK

⁶⁴ PP&O, *Marine Corps Information Operations – Pre-Decisional Draft*, 1.

⁶⁵ Maples, Michael D. "Relevant and Ready: The FA Now and in the Future," *Field Artillery Journal (online)*. Vol. 82003, <http://find.galegroup.com/itx/infomark.do?&contentSet=IAC-Documents&type=retrieve&tabID=T003&prodId=AONE&docId=A113194344&source=gale&srprod=AONE&userGroupName=usmcqum&version=1.0> (accessed November 29, 2007). Major General Michael D. Maples became the Chief of Field Artillery and Commanding General of Fort Sill, Oklahoma, on 23 August 2001, and later served as the Vice Director of the Joint Staff

of the Pentagon. He served as the 43rd Commandant of the Field Artillery School and 34th Chief of the Field Artillery.

⁶⁶ Subject matter expert (SME) survey, completed December 2007 and compiled on 26 December 2007. As part of my research, 71 Marine Corps artillery officers (company grade and field grade, active and reserve components), all whom had served in support of OIF or OEF, completed portions of a questionnaire tied to Information Operations. 51 of the 71 Officers indicated that in support of combat or COIN operations, they had served simultaneously in their traditional fire support/liaison role and also as the Information Operations Officer. A number of the 51 artillery officers surveyed that possess IO experience indicated that they were assigned the task based on their fire support backgrounds (targeting knowledge and proficiency) and to maximize the integration of fires in support of a commander (unity of effort in respect to targeting).

⁶⁷ Joint Publication 3-13, *Information Operations*, I-7. JP 3-13 identifies 5 “core competencies” within Information Operations (IO): Electronic Warfare (EW), Computer Network Operations (CNO), Psychological Operations (PSYOP), Military Deception (MILDEC), and Operational Security (OPSEC). The Joint Publication also identifies a number of “support capabilities” to include Information Assurance (IA), Physical Security, Physical Attack, Counter Intelligence (CI), and Combat Camera (COMCAM). Finally, the Joint Publication identifies a number of “related capabilities” to include Civil Military Operations (CMO), Public Affairs (PA), and Public Diplomacy. The artillery community can realistically be trained and employed to fulfill the following IO skills: PSYOP, COMCAM, CMO (as previously outlined in the theses), and PA to include combat correspondent (COMCOR) functions.

⁶⁸ The six warfighting functions are defined as maneuver, intelligence, fires, logistics, command and control, and force protection.

⁶⁹ Training and Education Command. *MOS Roadmap: 0811*. Vol. 2007. Quantico, VA: Headquarters Marine Corps, April 9, 2005. <https://www.tecom.usmc.mil>. (accessed December 15, 2007), 1-19.

⁷⁰ Subject matter expert (SME) interviews dated December 2007 and February 2008.

⁷¹ Subject matter expert (SME) survey conducted December 2007 and compiled on 30 December 2007. 73 Marine Corps artillery officers (company grade and field grade, active and reserve components), all whom had served in support of OIF or OEF, completed portions of a questionnaire tied to Civil Affairs. 51 of the 73 Officers indicated that in support of combat or COIN operations, they had performed Information Operations tasks in support of ground commanders. This survey of commissioned officers demonstrates that the assignment of artillery officers and enlisted MOS 0861s to the assignment of IO is not at all uncommon. Arguably, per this thesis, the assignment of this additional mission should be formalized (to include expanded formal training and schooling).

⁷² Anthis and Nash, “Notes from interview with Col John Koenig, Commander, 14th Marines”, 8.

⁷³ Subject matter expert (SME) interviews with three separate artillery field grade officers, all with recent OIF experience as fire support coordinators (FSCs) and Information Operations (IO) Staff Officers, December 13, 18, and 20, 2007.

⁷⁴ Subject matter expert (SME) surveys conducted December 2007. Of the 41 officers who commented on their pre-deployment and OIF-deployed experiences regarding IO, 33 acknowledged that their pre-deployment training was cursory in nature but that by means of in-theatre training and experience they became competent IO Staff Officers.

⁷⁵ MCO 3900.15A, *Marine Corps Expeditionary Force Development System*, 3. In late 1999, the Commandant of the Marine Corps (CMC) directed each element of the marine air-ground task force (MAGTF) to have an advocate at Headquarters Marine Corps (HQMC) to represent them in various internal and external processes occurring in the National Capitol Region, to include the Joint Requirements Oversight Committee (JROC). As a part of this process, the Marine Corps and all DOD agencies utilize the DOTMLPF process to validate the feasibility and intrinsic value of an emerging concept or initiative. DOTMLPF – Doctrine, Operations, Training, Material, Leadership and education, Personnel, and Facilities – are those criteria by which an initiative is evaluated for its cost, benefit, and supportability. Specific to this thesis, the three Transformation Proposals would undergo a DOTMLPF process, and, if accepted, would result in significant (but worthwhile) modifications in regard to DOTMLPF.

⁷⁶ MCWP 3-16.1, Artillery Operations, 1-1. This resource immediately expands the doctrinal definition into three responsibilities:

- Provide timely, close, accurate, continuous fire support
- Provide depth to combat by attacking hostile reserves, restricting movement, providing long range support for reconnaissance forces, and disrupting threat command and control (C2) systems and logistics installations; i.e., shaping the battlespace.
- Deliver counterfire within the range of the weapon systems to ensure freedom of action of the ground forces.

⁷⁷ MCCDC DOTLMPF 202K Working Group, Powerpoint Outbrief, 18 January 2007, Slide 4. Of note, the ANGLICO platoons are not solely manned by artillerymen. However, an ANGLICO platoon, by table of organization, does possess a significant percentage of line numbers that are manned by MOS 0802s and MOS 0861s. With the addition of the three ANGLICO platoons, a number of the projected 0802 and 0861 manpower plus-ups will be directed to ANGLICO.

⁷⁸ MCCDC DOTLMPF 202K Working Group, Supporting Document, Excel Spreadsheet with Fiscal Year MOS breakdowns , 18 January 2007.

⁷⁹ Table of Organization 1113G and also 1142G, dated Feb 2004.

⁸⁰ Strobl, Michael R., "Officer Assignments MMOA", MMOA-5: Quantico, Virginia, February 8, 2006, slide 14. The basis of LtCol Strobl's brief is founded from MCO 5320.12E.

⁸¹ Internet, *TECOM Webpage*. Each of the MOS Roadmaps, as posted on the internet, contain the following introductory or orienting information: "Successful leadership is the key to combat readiness and will always require a high degree of technical skill, professional knowledge, and

intellectual development. Marines achieve superiority in all three through a combination of MOS skill training, professional military education, and pursuit of off-duty, voluntary education. It is not always clear, however, when, where, and how to optimize each. To assist Marines the Marine Corps's Training and Education Center of Excellence and other agencies have developed MOS Roadmaps...MOS Roadmaps are just what the name implies – a roadmap through the T&E Continuum from Private to Master Gunnery Sergeant – a roadmap for success in the Marine Corps.”

⁸² Strange, Joe. *Perspectives on Warfighting: Number 4: Centers of Gravity & Critical Vulnerabilities: Building on the Clausewitzian Foundation So That We Can All Speak the Same Language*. Quantico, VA: Marine Corps University Foundation, 1996, 4.

⁸³ JP 1-02, 138.

⁸⁴ FM 3-05.40, *Civil Affairs Operations*, Glossary 8.

⁸⁵ FM 3-05.40, *Civil Affairs Operations*, Glossary 9.

⁸⁶ MCRP 5-12A, *Operational Terms and Graphics*, 1-30 & 1-31.

⁸⁷ JP 1-02, 138.

⁸⁸ JP 1-02, 138.

⁸⁹ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 4-5.

⁹⁰ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 4.

⁹¹ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 43.

⁹² MCWP 3-16.1, *Artillery Operations*, G-12.

⁹³ NAVMC DIR 3500.85, *I/O Planners T&R*, 74.

⁹⁴ FM 3-05.40, *Civil Affairs Operations*.

⁹⁵ MCWP 3-16.1, *Artillery Operations*, G-15.

⁹⁶ MCWP 3-16.1, *Artillery Operations*, G-15.

⁹⁷ OSD IO Roadmap, Oct 2003, p. 11. Note: The supporting and related capabilities that are normally included in discussions of IO are: counter-intelligence, physical attack, physical security, information assurance, public affairs, combat camera, civil-military operations, and defense support to public diplomacy.

⁹⁸ NAVMC DIR 3500.85, *I/O Planners T&R*, 75-76.

⁹⁹ NAVMC DIR 3500.85, *I/O Planners T&R*, 76.

¹⁰⁰ FM 3-05.40, *Civil Affairs Operations*, G-14.

¹⁰¹ FM 3-05.40, *Civil Affairs Operations*, G-15.

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- ¹⁰² NAVMC DIR 3500.85, *I/O Planners T&R*, 77.
- ¹⁰³ MCWP 3-16.1, *Artillery Operations*, G-22.
- ¹⁰⁴ FM 3-05.40, *Civil Affairs Operations*, Glossary 14.
- ¹⁰⁵ USMC Concepts and Programs, 68.
- ¹⁰⁶ Marine Corps Systems Command, M777 Light Weight Howitzer Program Manager VIP Brief – Photograph, M777 Light Weight Howitzer, accessed 3 December 2007.
- ¹⁰⁷ Marine Corps Systems Command, M777 Light Weight Howitzer Program Manager VIP Brief – Live-Fire Photograph, M777 Light Weight Howitzer, accessed 7 December 2007.
- ¹⁰⁸ HIMARS Test Unit/NETT VIP Brief, “HIMARS Brief to the MAGTF Fires OAG”, slide 4.
- ¹⁰⁹ Marine Corps Systems Command, High Mobility Artillery Rocket System Program Manager VIP Brief – HIMARS characteristics, slide 3.
- ¹¹⁰ Marine Corps Systems Command, High Mobility Artillery Rocket System Program Manager VIP Brief – Photograph, HIMARS postured, accessed 13 December 2007.
- ¹¹¹ Marine Corps Systems Command, High Mobility Artillery Rocket System Program Manager VIP Brief – Photograph, HIMARS postured, accessed 15 December 2007.
- ¹¹² Marine Corps Systems Command, Expeditionary Fire Support System Program Manager, VIP Brief - Diagram, Expeditionary Fire Support System (EFSS), briefing slides 4-8, 10, and 12.
- ¹¹³ Marine Corps Systems Command, Expeditionary Fire Support System Program Manager, VIP Brief - Diagram, Expeditionary Fire Support System (EFSS), accessed 30 January 2008.
- ¹¹⁴ Marine Corps Systems Command, Expeditionary Fire Support System Program Manager, VIP Brief - Photograph, Expeditionary Fire Support System (EFSS), accessed 30 January 2008
- ¹¹⁵ Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret, (Princeton University Press, Princeton, New Jersey: 1989), 595-6. “...one must keep the dominant characteristics...in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed.”
- ¹¹⁶ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 4.
- ¹¹⁷ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 4-5.
- ¹¹⁸ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 4.
- ¹¹⁹ Strange, *Perspectives on Warfighting: Centers of Gravity and Critical Vulnerabilities*, 43.
- ¹²⁰ MCWP 3-16.1, *Artillery Operations*, 1-1.

¹²¹ United States Marine Corps Total Force Structure Management System, *Unit TO&E Report, 1101H: Headquarters Battery, Artillery Regiment, Marine Division, Marine Corps Forces*. TO&E 1101H serves as the artillery regimental headquarters manpower and equipment structure template. A regimental headquarters' mission statement is enclosed as part of the unit's TO&E.

¹²² This mission statement modification is recommended because artillery regimental headquarters are suited to support the information operations non-lethal needs of the Marine Corps. An artillery regiment's liaison section should be trained to provide IO expertise in support of an infantry division.

¹²³ United States Marine Corps Total Force Structure Management System, *Unit TO&E Report, 1142G: Headquarters Battery, Artillery Battalion (3X6), Artillery Regiment, Marine Division, Marine Corps Forces*. TO&E 1142G serves as the active duty artillery battalion headquarters manpower and equipment structure template. An active duty battalion headquarters' mission statement is enclosed as part of the unit's TO&E.

¹²⁴ This mission statement modification is recommended in support of the thesis that artillery battalion headquarters are suited to support the information operations non-lethal needs of the Marine Corps. An artillery battalion's liaison section should be trained to provide IO expertise in support of an infantry regiment.

¹²⁵ United States Marine Corps Total Force Structure Management System, *Unit TO&E Report, 1113G-28 Feb 1994: 155mm Howitzer Battery, Artillery Battalion, Artillery Regiment, Marine Division, Fleet Marine Force*. TO&E 1113G serves as the active duty artillery firing battery manpower and equipment structure template. While dated Feb 1994, this TO&E has since been recertified as recently as 2006. An active duty firing battery's mission statement is enclosed as part of the unit's TO&E.

¹²⁶ This mission statement modification is recommended in recognition that firing batteries often conduct artillery operations independent of a battalion headquarters or independent of an artillery battalion. This fact is supported by the historical precedents of MEU deployments and OIF deployments. While artillery doctrine dictates that a tactical mission is assigned to an artillery battalion, and that the smallest tactical artillery unit is an artillery battalion, these MEU deployment and OIF rotations have demonstrated that firing batteries or commonly tasked and routinely conduct tactical operations at the Battery level. As the concept of Distributed Operations is further examined, this recommended modification carries even greater merit.

¹²⁷ This mission statement modification is recommended in support of the thesis that artillery units are best-suited to transform in support of the non-lethal needs of the Marine Corps. An artillery battery's liaison section should be trained to provide IO expertise in support of infantry battalions. An artillery forward observer team should be trained to provide IO expertise in support of an infantry company. An artillery battery should be trained and prepared to support civil affairs operations. An artillery battery, possessing limited command and control capabilities, should not be trained, tasked, or expected to perform civil military operations.

¹²⁸ NAVMC 3500.22, *Civil Affairs Training and Readiness Manual (Short Title: Civil Affairs T&R Manual)*, 18.

¹²⁹ "Mission Essential Task List (METL): Artillery Regiment." Training and Education Command, Marine Corps Combat Development Command.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007), 1.

¹³⁰ McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," Camp Pendleton, CA., October 17, 2006, Slide 12.

¹³¹ "Mission Essential Task List: Headquarters Battery Regiment." Training and Education Command, Marine Corps Combat Development Command, United States Marine Corps.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007). 1.

¹³² McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," Camp Pendleton, CA., October 17, 2006, Slide 12.

¹³³ "Mission Essential Task List (METL): Artillery Battalion (Cannon)." Training and Education Command, Marine Corps Combat Development Command.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007), 1.

¹³⁴ McCarthy, Michael A., Power Point Brief prepared for CG 1st MARDIV Major General Paxton, "11th Marines and Civil Affairs Operations," Camp Pendleton, CA., October 17, 2006, Slide 12.

¹³⁵ "Mission Essential Task List (METL): Artillery Battalion (Cannon)." Training and Education Command, Marine Corps Combat Development Command.
<https://www.intranet.tecom.usmc.mil/sites/g3/core%20mission%20essential%20task%20lists/forms/allitems.aspx> (accessed December 17, 2007), 1.

¹³⁶ It is the contention of the author that properly structured and resourced ATS's would be able to provide a series (somewhere between three to five) periods of block instruction (encompassing three to five days in length) of CA instruction to 0811s throughout the Regiment. The series of instruction would be building block in nature and would provide the students with necessary sustainment training, refresher training regarding Regimental policies or standards, and perhaps any updates regarding CA policy (intra-CONUS) and procedures (techniques being employed in-theater).

¹³⁷ If the modified artillery mission were adopted, and ATS's were structured and resourced as addressed in this paper, then it would be a realistic expectation that regimental commanders could direct his subordinate commanders with the mandate to conduct 2 days of CA training, per month, for all 0811s within the command. The subordinate commander's CA training efforts could be sponsored, facilitated, or conducted by the ATS's CA specialists. This consistent, building-block training approach, sponsored by the ATS, would ensure CA training and uniformity throughout the regiment while minimizing the burden on subordinate commanders.

¹³⁸ Nash, "Current U.S. Army Civil Affairs Courses", 6. The United States Army's CA Specialist Course is a four-week formal school at Fort Dix. The school is open to United States Army non-commissioned (NCO's) or the reserve and guard components and serves as an abbreviated course offered for active duty personnel. This abbreviated course would provide the Marine MOS 0811s with an CMO overview that would provide useful foundation knowledge of CMO, but would not examine the detailed information that CMO-specialists require. In order to make this a feasible training venue for Marines, the Marine Corps would need to coordinate with the United States Army, and specifically, discuss funding issues and concerns regarding the increase of student throughput.

¹³⁹ United Industries Incorporated, "Seabee Training Program," 1. UII has recently developed a program an augment/enhance Naval Seabee training and certifications. This program provides sharpened and technical training to Naval Seabees (active and reserve components). The training is offered in two-week blocks and encompasses practical skills including electrical, mechanics, steel and welding, and equipment operators. These two-week training packages could be opened up to Marine 0811, modified slightly as necessary, and addresses the skill sets required to address this arguments sixth CAA task – provide essential, rudimentary services. Funding, school seats, and potential curriculum modifications are all details that would require coordination and reconciliation.

¹⁴⁰ Coastline Community College, "AA Degree in Construction Technology," 1. Coastline Community College has tailored their curriculum to meet the needs of service members. One of the AA degrees, a degree in construction technology, is designed for "occupational specialities in all branches involved with various construction trades including heavy equipment operations, carpentry, building inspections, surveying, and public utilities. Servicemembers in the Navy's Seabees and the Army Corps of Enginneers," or perhaps United States Army and Marine Corps civil affairs personnel would benefit from the educational experience. Again, all of the degree's learning objectives are nested well within the six CA tasks proposed for adoption by 0811s. Course content, school seat availability, teaching capacity, etc., are all issues that would require coordination and reconciliation. This paper and this footnote does not serve as a direct advocate for Coastline Community College – countless other educational institutions offer similar degree programs.

¹⁴¹ A CA B-Billet would be conducted within the Regiment (assuming that a DOTMPLF examination of this paper would warrant expansion of the artillery T/O's to include increased CA billets), within one of the currently established CAGs, or perhaps in an exchange program with the United States Army's CA Branch or perhaps even the U.S. Navy Seabees.

¹⁴² *A Bell for Adano*, authored by John Hersey, was first published in 1944 by Alfred A. Knopf, Inc. It has been republished several times since, most recently by Vintage Books in March 1988. *A Bell for Adano* is a novel centered around a United States Army Major of Italian-American descent, Victor Joppolo, who serves as a Civil Affairs Officer in the small Italian town of Adano during World War II. This book details how Major Joppolo, injected into a community devastated by the horrors of World War II, is able to navigate through a culturally-foreign

environment and apply his skills as a Civil Affairs officer to improve the lives and gain the support of the town's people despite the ongoing devastation. *A Bell for Adano* was awarded the Pulitzer Prize in 1945. More germane to this research initiative, *A Bell for Adano* is recognized for its superb depiction of effective civil affairs activities and, as a result, has been added to the Marine Corps Professional Reading List. *A Bell for Adano's* inclusion on the Professional Reading List should be furthered to include all MOS 0811 cannoners in support of the Transformation proposals outlined in this study.

¹⁴³ Division of Labor and Industry, State of Maryland. "Apprenticeship and Training – Apprenticeable Occupations by Occupational Title," 1-4. This particular resource, as reflected in the title, provides information about the state of Maryland's apprenticeship program. While narrowly focuses and not directly affiliated with the military, this resource proved useful. A catalog of over 150 different apprenticeship programs are annotated within a catalog and then detailed in follow-on internet links. The catalog itself highlights several common apprenticeships that would prove invaluable to 0811 Marines tasks to prepare for and perform CAA functions, including the sixth suggested task, "provide essential, rudimentary services." These common apprenticeships (called common because they are common trades and undoubtedly would be found throughout the country, not just in the state of Maryland) include carpentry, electrical, masonry, machinist, and plumbing. In support of decentralized, dispersed, full-spectrum expeditionary operations, providing Marines with general laborer skills would prove invaluable. An option to the Marine Corps would be to secure funding and allow a select number/quality of 0811s attend a funded apprenticeship program and a local community college or technical school. The apprenticeships would all be directly tied to the sixth CAA task (rudimentary, essential services) and would be tightly monitored/controlled by the artillery headquarters and Marine-Corps at-large to ensure that 0811s were populating these apprenticeships and "covering-down" on all of the relevant apprenticeships. Such a program would not only address the training needs of 0811s necessary to fulfill the additive CA mission, but it would arguably also enhance retention, and certainly would provide Marines exiting the service with a tangible, marketable skill.

¹⁴⁴ It is the contention of the author that properly structured and resourced ATS's would be able to provide a series (somewhere between three to five) periods of block instruction (encompassing three to five days in length) of CMO instruction to 0848s and its feeder MOS's throughout the regiment. The series of instruction would be building block in nature and would provide the students with necessary sustainment training, refresher training regarding Regimental policies or standards, and perhaps any updates regarding CMO policy (intra-CONUS) and procedures (techniques being employed in-theater).

¹⁴⁵ If the modified artillery mission were adopted, and ATS's were structured and resourced as addressed in this paper, then it would be a realistic expectation that regimental commanders could direct his subordinate commanders with the mandate to conduct 2 days of CMO training per month for all 0848s and 0848-feeders within the command. The subordinate commander's CMO training efforts could be sponsored, facilitated, or conducted by the ATS's CMO specialists. This consistent, building-block training approach, sponsored by the ATS, would

ensure CMO training and uniformity throughout the regiment while minimizing the burden on subordinate commanders.

¹⁴⁶ Nash, "Current U.S. Army Civil Affairs Courses", 4. The United States Army's CA MOS-Training (MOS-T) Course is a nine-week formal school at Fort Bragg, NC. The school is open to United States Army non-commissioned officers (NCO's) and serves as the formal training requirement to qualify the United States Army's CA Specialist (38A). This course would be ideal for Marine 0842s, 0844s, or 0847s assigned to a CMO B-Billet to replace or augment the SCETC CA training package (currently under design). In order to make this a feasible training venue for Marines, the Marine Corps would need to coordinate with the United States Army, and specifically, discuss funding issues and concerns regarding the increase of student throughput.

¹⁴⁷ Nash, "Current U.S. Army Civil Affairs Courses", 9. The United States Army's CA Battalion COC Course (BNCOC) Course is a four-week formal school at Fort Bragg, NC. The school is open to United States Army staff non-commissioned officers (SNCO's) and provides the Army's senior enlisted soldiers with the leadership training and command-and-control techniques required to facilitate CMOC operations. This course would provide the Marine Corps' MOS 0848 (staff non-commissioned officers) with the leadership and management tools necessary to facilitate CMOC operations. In order to make this a feasible training venue for Marines, the Marine Corps would need to coordinate with the United States Army, and specifically, discuss funding issues and concerns regarding the increase of student throughput.

¹⁴⁸ University of Phoenix, "Associate of Arts in Human Services Management," 1. This paper, nor this specific footnote, serves as an advocate or free advertisement of the University of Phoenix. However, in place at the University of Phoenix, a distance education program with wide popularity and common acceptance, and certainly a countless number of additional education institutions, is an Associates Program in Human Services Management. This particular course "is focused in the area of human services, organizations, roles of human services workers, public policy, multicultural practices, information technology, financial management, and regulatory and ethical issues." All of the above-mentioned skills are interwoven within the CMO core competencies presented in doctrine and highlighted in this paper. The mechanism for Marines to conduct off-duty education is already in-place. Through proper incentives (monetary bonus?), concessions (slightly modified work hours to ease the burden of off-duty education), etc., 0848s and their feeders could be steered into a AA program that specifically address CMO-related skill sets.

¹⁴⁹ A CMO B-Billet would be conducted within the Regiment (assuming that a DOTMPLF examination of this paper would warrant expansion of the artillery T/O's to include increased CA billets), within one of the currently established CAGs, or perhaps in an exchange program with the United States Army's CA Branch or perhaps even the U.S. Navy Seabees.

¹⁵⁰ Machiavelli, *The Prince*, translated, edited, and introduction by Daniel Donno. Nicollo Machiavelli was born in Italy in 1469. In 1498 has appointed to the Chancellery of the Florentine Republic and served both as an administrator and a diplomat. During Machiavelli's service, he became acquainted with countless political leaders throughout Europe, to include

Cesare Borgia, who presumably serves as the model for *The Prince*. The publisher states, "Even today [*The Prince*] remains a disturbingly realistic and prophetic work" on the inner-working [of governments and political institutions]...this small sixteenth-century masterpiece [is regarded] as essential reading for every student of government and is the ultimate book on power and politics. Additionally, the Marine Corps' CMO advocates, to include Colonel Montgomery, the Marine Corps' CMO integration officer at MCCDC, endorse this book as a pivotal, foundation book for CMO students.

¹⁵¹ It is the contention of the author that properly structured and resourced ATS's would be able to provide a series (somewhere between three to five) periods of block instruction (encompassing three to five days in length) of IO instruction to 0861s throughout the regiment. The series of instruction would be building block in nature and would provide the students with necessary sustainment training, refresher training regarding Regimental policies or standards, and perhaps any updates regarding IO policy (intra-CONUS) and procedures (techniques being employed in-theater).

¹⁵² Both EWTGLANT and EWTGPAC offer a one-week IO orientation course. Nearly a dozen courses are hosted at Little Creek, VA, and Coronado, CA, annually; EWTG also organizes and conducts a number of Mobile Training Teams (MTTs) each year, traveling to MSC's/Bases, both CONUS and overseas, to provide on-site training for Marines.

¹⁵³ If the modified artillery mission were adopted, and ATS's were structured and resourced as addressed in this paper, then it would be a realistic expectation that regimental commanders could direct his subordinate commanders with the mandate to conduct 2 days of IO training per month for all 0861s. The subordinate commander's IO training efforts could be sponsored, facilitated, or conducted by the ATS's IO specialists. This consistent, building-block training approach, sponsored by the ATS, would ensure IO training and uniformity throughout the regiment while minimizing the burden on subordinate commanders.

¹⁵⁴ U.S. Army John F. Kennedy Special Warfare Center and School, "Psychological Operations Training Pipeline," 1-2. This is the United States Army's 42-week school that produces its 37F's: Psychological Operations Specialists. In line with this paper's Transformation proposals, it is recommended that any 0861 that is identified to serve in an IO or PSYOP B-Billet be required to attend this course. It is also recommended that Marine Corps recognize this course and award the MOS 0521 (Psychological Operations Specialist) to those Marine who complete this course. In order to make this a feasible training venue for Marines, the Marine Corps would need to coordinate with the United States Army, and specifically, discuss funding issues and concerns regarding the increase of student throughput.

¹⁵⁵ University of Phoenix, "Associate of Arts in Communications," 1. This paper, nor this specific footnote, serves as an advocate or free advertisement of the University of Phoenix. However, in place at the University of Phoenix, a distance education program with wide popularity and common acceptance, and certainly a countless number of additional education institutions, is an Associates Program in communications. This particular "win-win communications processes, problem-solving information strategies, an extensive review of

information sources, and news presentation for print, web, and broadcast delivery. Students review and assess pivotal influences on the development of mass media and speculate upon their future evolution.” All of the above-mentioned skills are interwoven within the IO core, supporting, and related competencies presented as doctrine and highlighted in this paper. The mechanism for Marines to conduct off-duty education is already in-place. Through proper incentives (monetary bonus?), concessions (slightly modified work hours to ease the burden of off-duty education), etc., 0861s and their feeders could be steered into a AA program that specifically address IO-related skill sets.

¹⁵⁶ An IO B-Billet would be conducted within the regiment or embedded within an infantry battalio/ regiment as an attachment (assuming that a DOTMPLF examination of this paper would warrant expansion of the artillery T/O’s to include increased CA billets). Additionally, 0861s assigned to an IO-Billet could fill T/O line numbers within the MCOIC, or perhaps be assigned to an exchange program with the United States Army’s PSYOP Branch or IO Functional Area. Countless other joint billets or billets within United States Navy or Air Force structure could be considered for exchange programs, as well.

¹⁵⁷ As a part of the Transformation arguments presented in this paper, it was identified that IO Mission Essential Tasks that the artillery’s fire supporters could reasonably be assigned and trained to include COMCAM and PA to include COMCOR. Assignment of a select number of 0861s to COMCAM and COMCOR B-Billets within the MAGTF, to include the completion of formal MOS training, would engrain these fields of expertise within the artillery community.

¹⁵⁸ Internet, “Psychological Operations: Bibliography and Recommended Reading List,” <http://www.psywarrior.com/books.html>, accessed 28 December 2007. This source cites M. E. (“Wheezy”) Roberts book, published in 2005, as a superb-quality contemporary discussion regarding Psychological Operations. The “195-page paperback book, [written] by [Roberts], a former PSYOP Detachment Sergeant in Kandahar and Team Chief in Geresk in 2002 and 2003, [details] ...how a Tactical PSYOP Team operates in today’s uncertain atmosphere.

¹⁵⁹ Montagu, Ewen. *The Man Who Never Was*, Bantam Books, New York: 1954. Ewen Montagu’s book outlines “Operation Mincemeat,” a classic historical account of a World War II Allied deception plan designed to deceive Nazi Germany in concert with Operation Torch (the invasion of Sicily). This book outlines in detail the planning and execution of a superb military deception (MILDEC) plan and encompasses several of the core, supporting, and related competencies of IO. Specific reference is made to this historical study as part of the Marine Corps Command and Staff College’s Operational Art block of instruction, and excerpts of Montagu’s book are utilized in support of the College’s IO elective.

¹⁶⁰ Dunne, “Subject Matter Expert Survey: Artillery Battalion Commander/Staff”. The “Demographics/Background” data, collected as part of the SME survey, was utilized to verify that the background of the SME included a tour as an artillery battalion commander, artillery battalion I&I, or service as a primary staff member on an artillery battalion staff. Those individuals whose “demographics/background” did not meet these criteria were either compiled with those with artillery battery-level experience (as applicable) or discarded outright.

¹⁶¹ Questions 2-10 of this survey further explore and define the non-lethal experiences of each subject matter expert. Those surveys that indicated extensive experience in IO, CMO, or PYSOP were scrutinized for qualitative data and/or were contacted for follow-up, subject matter expert personal interviews.

¹⁶² Mojave Viper is the current capstone pre-deployment training exercise for OIF-deploying battalions. It is conducted at the Marine Corps Air-Ground Combat Center (MCAGCC) at Twentynine Palms, California. Mojave Viper is focused on counter-insurgency (COIN) Mission Essential Tasks (METs) and has replaced the traditional Combined Arms Exercises (CAX) previously conducted at Twentynine Palms.

¹⁶³ T&R Evaluation or Training and Readiness Evaluation is an evaluation of an individual, section, or unit ranging in size from a platoon to a regiment. The specific tasks, conditions, and standards of the evaluation are extracted from a specific T&R Manual; a T&R Manual is an actual Marine Corps Order, specific to an MOS or community of MOSs. Relevant to this discussion, the artillery community, civil military operations and civil affairs, and information operations all have separate T&R manuals that outline performance evaluation tasks, conditions, and standards. This system is an extension of what was previously referred to in the Marine Corps as a Marine Corps Combat Readiness Evaluation or MCCRE.

¹⁶⁴ Questions 18-28 were developed to determine the ability and willingness of artillery battalion commanders to train-to-standard IRT CMO. Clearly, the unit's pending or potential OIF mission (artillery or any collection of in-lieu-of missions) largely dictated that unit's training priorities. What became clear after examining the collected data is that commanders currently are not resourced in order to efficiently train to a lethal and non-lethal skill set.

¹⁶⁵ FAOBC or the Field Artillery Basic Course is the formal, entry-level training (ELT) that all Marine and also Army artillery officers complete as a prerequisite to earn their MOS (Marine Corps) or branch designation (Army). Over the course of time, the length of instruction has varied from twelve to twenty weeks. FAOBC (Field Artillery Officer Basic Course) is a *dated* term; subsequent to the completion of research associated with this paper, it has been learned that artillery FOABC has been re-designated BOLC III. BOLC is an acronym for Basic Officer Leaders Course, and an MOS school is the third phase of BOLC. Officer Candidate School (OCS) or its service-specific rendition is designated as BOLC I and the Basic School (TBS) or its service-specific rendition is designated as BOLC II.

¹⁶⁶ Dunne, "Subject Matter Expert Survey: Infantry Battalion Commander/Staff". The "Demographics/Background" data, collected as part of the SME survey, was utilized to verify that the background of the SME included a tour as an infantry battalion commander, infantry artillery battalion I&I, or service as a primary staff member on an artillery battalion staff. Those individuals whose "demographics/background" did not meet these criteria were either compiled with those with infantry company-level experience (as applicable) or discarded outright. For clarity, the term infantry includes those with experience within a tank or light armored vehicle (LAV) battalion, as well.