Academic Year 2017 - 2018

Marine Corps University Research Topic Nominations

**Note: If you select one of the following research topics please contact the POC listed and coordinate the submission of your research.*

Aviation Research

- Impacts of STOVL Ramps on LHD/LHA Class ships
- Tactical Hard Deck Flight Hours for all USMC Aircraft Types

Command and Control

- Integrate Base Facility Organizations and Operations

Force Structure

- Base Support Structure
- MCF 2025 Impact on Logistics Support Capabilities and Capacities

Logistics

- Contingency Theater Support Challenges (Theater Setting and Support Responsibilities)
- EFFECTIVENESS OF INTERMEDIATE LEVEL MAINTENANCE
- Equipment Training Allowance
- Ground Supply Intermediate Level Capacity Study
- Hybrid Readying/Packaging to Improve Unmanned Logistics Systems-Air (ULS-Air) Distribution Capabilities
- Improving USMC Ground Maintenance through Vehicle Sensors and Analytics
- Logistics Capacity
- Service Support Plan Template
- Supply Chain Resiliency
- Tool Development to Support Planning, Procuring, and Managing/Kitting of SL items
- Unmanned and Autonomous Systems
- Unmanned Logistics Systems – Ground (ULS-G) in the Future Operating Environment
- USMC Modular Tactical Distribution in the Battlefield

Technology

- Additive Manufacturing
- Big Data and Bio-Metrics
- Characteristics of Innovative Organizations
- Encourage Innovation in Service Contracts
- Improving Military Acquisitions to Plan for the Incorporation of Future Technological Enhancements, Advancements, and Modifications
- Lighten the Load
- Sense and Response Logistics (S&RL)

Training

- Logistics Training and Education Modernization
- Marine Corps Ground Equipment Fabricator
- Review of Infantry Officer Course Hike Standards and Applicability to Regular and Recurring Infantry Duties
- The Value of Firing 155mm in Training Artillery Units

Aviation Research

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Impacts of STOVL Ramps on LHD/LHA Class ships

*TOPIC DESCRIPTION: Describe the impacts on fixed wing, rotary wing, and tilt rotor aviation activities if ski-jump ramps of various inclinations (12 degrees, 9 degrees, 6 degrees) are used on LHD/LHA class ships.

*DATE SUBMITTED: 24 April 2017

*EXTENDED TOPIC DESCRIPTION: Ostensibly, ski-jump style ramps improve the takeoff performance of fixed wing aircraft in the absence of a catapult system. Most (all?) countries that operate STOVL aircraft have ramp-equipped ships. These ramps, while improving fixed wing performance may possibly reduce the number of deck spots available for rotary wing and tilt rotor assets. Define these impacts for decision-makers. This research should examine the impacts in hot/tropical environments and high density altitudes.

*DESIRED OBJECTIVES OF THE RESEARCH: This topic should provide information on the trade-offs associated with ships having, or not having a ski-jump ramp.

*REQUESTING/SPONSORING ORGANIZATION: OAD

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COMMENTS: This research may have to use classified data. I am not 100% sure that the required information is unclassified.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Tactical Hard Deck Flight Hours for all USMC Aircraft Types

*TOPIC DESCRIPTION: Conduct analysis to determine minimum safe flight-hours per crew per month for each USMC aircraft type to maintain safe flight and basic tactical proficiency.

*DATE SUBMITTED: 24 March 2017

*EXTENDED TOPIC DESCRIPTION: The Tactical Hard Deck is the minimum number flight-hours per crew per month (H/C/M) to prevent a significant spike in aircraft mishap rates. CNA conducted a study determining estimated mishap rate increase correlated with reductions in H/C/M to come up with a Tactical Hard Deck; the CNA study conducted the analysis based on USN aircraft only. We are requesting a comparable effort to determine the same correlation for USMC type of aircraft not included in the original study.

*DESIRED OBJECTIVES OF THE RESEARCH: Determination of Tactical Hard Deck hours for all USMC Aircraft Types.

*REQUESTING/SPONSORING ORGANIZATION: MARFORCOM, G-3/5/7

*POINT OF CONTACT: LtCol Zimmer, Mark D

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DESIRED RESEARCH COMPLETION DATE: As soon as possible or within the next 2 years.

COMMENTS: Contact POC for copy of CNA study and other supporting materials referenced above.

Command and Control

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Integrate Base Facility Organizations and Operations

*TOPIC DESCRIPTION: Currently installations and bases have multiple facility operations with separate missions, command structures, and services. Research the costs/benefits for a base to integrate multiple facility operations in a Command and Control Center (ex. Fire, Utilities, Security, Range Control). Example is the Regional Operations Center concept in place for Naval District Washington located at the Washington Navy Yard.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research the costs/benefits for a base to integrate multiple facility operations in a Command and Control Center (ex. Fire, Utilities, Security, Range Control). Example is the Regional Operations Center concept in place for Naval District Washington located at the Washington Navy Yard.

*REQUESTING/SPONSORING ORGANIZATION: MCICOM and LX, HQMC Installations and Logistics

*POINT OF CONTACT: Mr. David Heinrichs, Head, Facilities Operations and Energy
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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

Force Structure

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Base Support Structure

*TOPIC DESCRIPTION: Installations and base facilities are required to organize and operate in the most efficient and effective method to support units, Marines and families. Based on your experience and research, can the Marine Corps Facilities Management Organization be structured for more efficient and cost base support? How should Marine Corps bases organize to operate and maintain facilities that have increasingly new technology? Research should examine resourcing models (mission funding and working capital fund) and manning (contractors, government civilians, military personnel), training, facilities, and tools for improvement opportunities.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research should examine resourcing models (mission funding and working capital fund) and manning (contractors, government civilians, military personnel), training, facilities, and tools for improvement opportunities.

*REQUESTING/SPONSORING ORGANIZATION: MCICOM and LX, HQMC Installations and Logistics

*POINT OF CONTACT: Mr. David Heinrichs, Head, Facilities Operations and Energy
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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: MCF 2025 Impact on Logistics Support Capabilities and Capacities

*TOPIC DESCRIPTION: What is the impact in Log Support Capabilities and Capacity based on the implementation of MCF 2025 and prospective reduction in key Logistics OccFields and capabilities. Compare MCF 2025 future structure against current, FY17 authorized structure.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: With the implementation of MCF 2025, OpFor Force Structure will be altered IOT meet future structure strategy objectives. Although there have been informal and anecdotal assessments of the impact to the force and for the purpose of this study nomination, the MAGTF LCE, there is no formal or scientific study to identify prospective shortfall(s) in either MAGTF LCE (MLG) or Total Force (GCE, ACE, CE or Supporting Est) logistics capabilities.

*DESIRED OBJECTIVES OF THE RESEARCH: 1. Identification of MLG logistics function capability decrement as a result of MCF 2025 implementation.
2. Identification of "Total Force" Logistics capability decrement as a result of MCF 2025 implementation.

*REQUESTING/SPONSORING ORGANIZATION: LPO, HQMC Installations and Logistics

*POINT OF CONTACT: Mr. Steven M. Dotson, Dep Section Head, LPO-1
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DESIRED RESEARCH COMPLETION DATE: 31 Oct 2017

Logistics

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Contingency Theater Support Challenges (Theater Setting and Support Responsibilities)

*TOPIC DESCRIPTION: With the recent reductions in Army theater support capabilities (i.e. fuel, water, contracting, engineering, contracting, etc.) and realignment from Active Component (AC) to Reserve Component (RC), the early entry of the Marine Corps into contingencies may leave USMC holding the bag for theater support until/if the Army or other Services cannot activate, deploy, or employ to provide theater support. Research possible avenues for contingency theater support to be established in an A2AD environment for temporary or sustaining support in an operation.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: A researched review of the possible avenues for contingency theater support to be established in an A2AD environment and provide recommendations for improvement.

*REQUESTING/SPONSORING ORGANIZATION: LPV and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: EFFECTIVENESS OF INTERMEDIATE LEVEL MAINTENANCE

*TOPIC DESCRIPTION: I&L is standing up a working group to address concerns with intermediate level maintenance (e.g. training, tooling, personnel). Our concern is the effectiveness of maintenance actions performed by intermediate level technicians and how well the equipment functions after being serviced at the intermediate level.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: Due to various factors in the 2004 timeframe, rebuild of secondary repairables at the intermediate level was reduced. Since that time, we have commenced rebuild on some equipment, but have not invested in the tooling and training necessary for maximum effectiveness. In standing up a working group to identify issues and solutions with the intermediate level of maintenance, one data point necessary to move forward is understanding the quality of the maintenance actions performed at the intermediate level and the impact that the maintenance actions have on equipment. We need to know if the actions return the equipment to fully functional for an extended period of time; whether it further degrades the equipment leading to further expensive depot level repairs; or whether it causes the equipment to bounce back and forth in the maintenance cycle, never quite fully repaired.

*DESIRED OBJECTIVES OF THE RESEARCH: Does equipment repaired by the intermediate level return to the operators in a fully functional condition? Is the equipment returned to full functionality in a timely manner? Does the perceived lack of tooling and training cause the RIP to bypass the intermediate level and evacuate equipment to contractors or to the depot?

*REQUESTING/SPONSORING ORGANIZATION: LPC-1 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Limited funding available for meetings (local travel)

COMMENTS: The individual conducting the study may wish to attend I&L working group meetings.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Equipment Training Allowance

*TOPIC DESCRIPTION: Marine Forces Reserve (MFR) utilizes a Training Allowance (T/A) of equipment as a opposed to a T/E per unit for equipping units, due to limitations in number of maintainers, space restrictions at reserve sites, and training requirements. The T/A is recommended by the commanding officer and approved by MFR; T/A is either at full T/E or less, based on the commander's estimate of their situation. Examine the potential use (pros/cons/analytics) of a T/A model for modifying the I and II MEF T/E similarly to the MFR method.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: A researched review providing a cost benefit analysis for the potential utilization of a T/A model for modifying the I and II MEF T/E; and recommendations for possible implementation.

*REQUESTING/SPONSORING ORGANIZATION: EGEM and LX , HQMC Installations and Logistics

*POINT OF CONTACT: Maj Richard Jennings, EGEM
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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Ground Supply Intermediate Level Capacity Study

*TOPIC DESCRIPTION: The objective of the study in two parts is to (A) define a measurable standard of capacity model for the Intermediate Level Supply and (B) determine personnel requirements supporting a determined capacity. The purpose of this study is to determine Intermediate Level Supply capacity model which can be used to define a personnel manning formula to achieve a desired level of capacity at the intermediate accounts (i.e. Supply Management Units (SMU), Repairable Issue Points (RIP), MEU Combat Logistics Battalion (CLB), and Special Purpose Marine Air Ground Task Force (SPMAGTF)). The goal is to determine if Intermediate Level Supply accounts (SMU and RIP) are optimized for their respective MEF'S needed level of capacity per account and utilize a capacity manning formula to determine personnel requirements for a task organized unit, in support of force planning.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: Per Volume 3 of Marine Corps Order 4400.201 "Management of Property in Possession of the Marine Corps;" Intermediate Level Supply accounts typically exist between the consumer (battalion/unit Level) and wholesale (depot) levels of inventory and supports a defined geographic area or provides tailored support to specific organizations or activities. In 2012, Intermediate Level Supply accounts (SMU and RIP) experienced a reduction in personnel as a result of the Marine Corps force reduction to a 182K force. Since then, Officers In Charge of Intermediate Level Supply accounts have voiced concerns about not being able to adequately support the MEFs due to reduced manpower and increased requirements to support exercises and contingencies. However Intermediate Level accounts are currently unable to quantify the reduction in capacity and the effect on MEF readiness. Recent data calls for Intermediate Level metrics to define supply capacity in relation to manpower for Force 2025, yielded mixed results. All Intermediate Level accounts seem to have a different replenishment and stocking models, and are unable to relate outputs to the MEF readiness or required manpower. During the October 2016 Ground Supply Training and Readiness conference, Supply Subject Matter Experts (SMEs) stated that defining supply capacity and relating it to MEF readiness and manpower strength is a difficult task that requires an analysis expertise not resident within the Supply Battalions.

*DESIRED OBJECTIVES OF THE RESEARCH: A graduate-level researched paper that seeks to illuminate one or several of the following questions:
What is Intermediate Level supply capacity?

What metrics feed into supply capacity?
What effect does supply capacity have on supported unit readiness? Are standing Intermediate Level supply accounts (SMUs and RIPs) operating at, above, or below desired capacity?
What is minimal and optimal force structure for standing Intermediate Level supply accounts?
What risks are assumed at lowering levels of capacity?
What manpower rank, MOS, and quantity support capacity (X Marines in X Billets = X Capacity)?
How does an Intermediate Level activity determine for a task organized force?

*REQUESTING/SPONSORING ORGANIZATION: LPC and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Hybrid Readying/Packaging to Improve Unmanned Logistics Systems-Air (ULS-Air) Distribution Capabilities

*TOPIC DESCRIPTION: Currently, there has not yet been an established method of readying or packaging methods of Class I, III, V, VIII (A and B), and IX Materials for efficient distribution in support of Unmanned Logistics Systems (ULS) - whether they be air, ground, surface, or sub-surface as outlined in the Marine Expeditionary Rifle Squad Initial Capabilities Document (MERS ICD). As the trade space of ULS platforms matures, there will need to be a robust and efficient readying and packaging method developed and in place to support the distribution efforts of ULS. This study will investigate current packaging and distribution methods of supply materiel currently being practiced by the Marine Corps and look for avenues to improve efficiencies in current practice and help identify best methods, to leverage the developing capability of ULS-Air operations and their associated platforms through savings in: time, space, and weight.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: The ability of a MAGTF to successfully conduct expeditionary operations relies on its ability to rapidly project and sustain a force, on and from the sea or an expeditionary advanced base, into a foreign setting regardless of mission or operational challenges. Expeditionary Logistics – the ability to rapidly develop the responsive and agile architecture necessary to support and sustain operations in austere environments, frequently on short notice, and where operational requirements may dictate the dispersal of forces across a large geographic area – and the ability to synchronize resources across the levels of war, are critical to combat operations.

To accomplish this, Marine Corps logisticians can provide comprehensive and responsive logistics support to the 2025 MAGTF by blending current logistical capacity with evolving 21st century capabilities. This hybrid configuration can ensure we continue to meet the demands of legacy requirements in water, fuel, ammunition, and sustainment blocks while optimizing the promise of unmanned platforms that are modular, rapidly deployable, scalable and flexible enough to support squad, company, battalion, or regimental level distributed operations at distances beyond the classic “Force Beachhead Line.” As the trade space of these unmanned platforms matures, there will need to be a robust and efficient readying and packaging method developed and in place to support the distribution efforts of these unmanned platforms.

*DESIRED OBJECTIVES OF THE RESEARCH: A graduate-level researched paper that seeks to illuminate one or several of the following questions:
a) Assess current readying and packaging methods for Classes I, III, V, VIII (A/B), and IX materiel to meet required ULS-Air distribution requirements.
b) Review and analyze impact of time savings, space savings, weight savings, or overall efficiency in regards to different readying and packaging of Classes I, III, V, VIII (A/B), and IX materiel.
c) Analyze variables that impact time savings, space savings, weight savings, or overall efficiency of packaging in regards to different readying/packaging of Classes I, III, V, VIII (A/B), and IX.
d) Develop alternative readying and packaging methods to meet required ULS-Air distribution requirements.
e) Develop recommendations to improve Marine Corps readying and packaging methodologies to realize the potential of ULS-Air distribution capabilities.

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Funding available

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Improving USMC Ground Maintenance through Vehicle Sensors and Analytics

*TOPIC DESCRIPTION: A business case analysis that determines the return on investment (ROI) of the installation of communication pathways that record onboard vehicle equipment sensing data that can be consolidated to a central repository with analytics to forecast predictive and preventative maintenance.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: Currently, some Marine Corps ground vehicles are equipped with a variety of sensors capable of reading the operating condition of various parts and assemblies. However, because this technology was not planned to be utilized on these platforms and not integrated during the acquisition process, these sensors do not always communicate with each other or provide a way for all recorded data to be transferred into the authoritative maintenance systems of record (i.e. GCSS-MC) for analysis and trend identification. There are a variety of potential commercial solutions available and numerous proofs of concept and pilot programs being conducted on these solutions. However, one overarching question is “What benefit will this link to the sensor data provide?” The intent is to support smarter and more effective resource (labor-hours and cost) allocation as well as improved maintenance availability of the vehicles. Determining from ROI establishing a link between the vehicle’s data sensors and analytics has not been researched or reviewed.

*DESIRED OBJECTIVES OF THE RESEARCH: A graduate-level researched paper that seeks to illuminate one or several of the following questions:
a) What private sector analytic forecast models in use forecast maintenance requirements from all data collected from currently installed onboard sensors?
b) Does this data analysis translate into actionable information that will produce high return on investment over the short or long term in terms of cost effectiveness or more effective vehicle management?
c) Looking at end-to-end from data creation on the vehicle to data collection outside and analysis, what industry methods, best practices, or technologies can facilitate or support this?

*REQUESTING/SPONSORING ORGANIZATION: LPV and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Logistics Capacity

*TOPIC DESCRIPTION: The Marine Corps' Marine Logistics Groups (MLGs) does not have a standardized method for determining or communicating logistics capacity –X logistics Marines with Y Equipment are able to support what Z capacity of the MAGTF? Although Marine logisticians task organize personnel and equipment to the demands of the mission, this lack of standardized logistics capacity assessment can lead to uncertainty at the operational and tactical level. It is difficult to convey the logistics capacity that may or may not be resident within a unit. It also complicates readiness and force management determinations at higher levels within the organization. This becomes particularly problematic with force reductions and quantifying losses.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: In 2006, the Force Service Support Group (FSSG) was re-designated as the Marine Logistics Group (MLG). The MLG provides general and direct logistics combat support to USMC units. However, many of the resulting structural changes resulted in uncertainty at both the operational and tactical levels concerning how to measure logistics capacity.
In his book "Recurring Logistic Problems as I Have Observed Them," GEN Carter Magruder (USA ret) counts the problem of establishing or confirming the right balance which support troops and combat troops as a persistent challenge since WWII.

*DESIRED OBJECTIVES OF THE RESEARCH: Research and define the best ways for the Marine Corps to meet and adjust to the "recurring problem" of understanding or quantifying logistics capacity. As this problem has been engaged in a variety of ways since the 1940s, perhaps a new approach is required that does not give a definitive answer. Provide a cost/benefit analysis of your recommendation and plan for implementation.

*REQUESTING/SPONSORING ORGANIZATION: LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

COMMENTS: Able to provide student with previous studies in topic.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Service Support Plan Template

*TOPIC DESCRIPTION: Determine requirements for a “Service Support Plan” template to aid deliberate planners in the development of Total Force Mobilization, Deployment and Sustainment plans in support of 4+1 OpPlans.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: In the on-going analysis of PACOM/MARFORPAC OpPlan requirements supporting HQMC organizations and HQMC have determined that Total Force Mobilization and deployment support, from the enterprise perspective, requires codification. Initial research indicates that there are concerns and shortfalls with; Reserve mobilization, assembly, synchronization, outfitting and any CONUS integration, RBE and WRMR strategy (to include surge MX), Regional/local Infrastructure support CONOPS, RC back fill of AC CONUS commitments, Contract support, MPF activation, etc. Regardless which contingency, there are required steps and milestones that must be addressed, and if applied to the most stressing OPLANs, a Service Support Plan template provides a set of questions that must be answered.

*DESIRED OBJECTIVES OF THE RESEARCH: A “Service Support Plan” template that identifies major support milestones, Lines of Effort and Service/Enterprise responsibilities for Total Force mobilization ISO a major OpPlan deployment (ie, PACOM or EUCOM Plan).

*REQUESTING/SPONSORING ORGANIZATION: LPO, HQMC Installations and Logistics, PLN, HQMC Plans Policies and Operations

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DESIRED RESEARCH COMPLETION DATE: 31 Oct 2017

AVAILABLE FUNDING, IF ANY: None.

COMMENTS: Marine Components are required to develop a supporting operation plan to satisfy the requirements of the Supported Commander's Plan (GCC). Current Service planning looks outward at OPLAN/CONPLAN requirements from supported GCC's, and tends to neglect Total Force mobilization and enterprise support. Based on informal research, there are currently no Service-level plans, templates or directives for Total Force mobilization synchronization and support for major OPLANs. MCO 3000.19B addresses the activation, mobilization and support of USMCR Forces, exclusively, and fails to adequately address "Total Force" Mobilization support, despite the document title. MCO 3000.18B addresses the Force Deployment Planning and Execution process generally, yet falls short of plan specificity. A Service Support Plan template would provide the shell to build out Service Support Plans in support of National Military Strategy. Researchers would be tasked with a thorough assessment of applicable DoD, Joint and Service guidance documents and engage POCs for detailed coordination.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Supply Chain Resiliency

*TOPIC DESCRIPTION: The operating environment of concern in Expeditionary Force 21 (EF21) is the Anti-Access/Area-Denial (A2AD) threat for future expeditionary operations. In this threatened area of operations, units and logistics capabilities will be greatly dispersed and separated over a wide area that is under enemy threat. Examine how I&L can build resilience in the Supply Chain to counter a near peer A2AD threat and provide logistics support in distributed operations.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research cost & benefits and provide recommendations for action and implementation for building supply chain resiliency in an A2AD environment.

*REQUESTING/SPONSORING ORGANIZATION: LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Tool Development to Support Planning, Procuring, and Managing/Kitting of SL items

*TOPIC DESCRIPTION: Stock List (SL) items are those ancillary components that make a Principal End Item (PEI) complete for operational end use. It's LOGCOM's responsibility to ensure proper planning, procurement, and kitting of SL items for association and subsequent issue to end users. Marine Corps Systems Command and PEO Land Systems Program Managers (PMs) are responsible to establish, publish, and maintain current SL lists for various PEIs. The PMs determine the type category of components and the party responsible to provide the item such as the supply system (wholesale) or using unit. The lists are not available in an automated format for download into a system for planning, procurement, or kitting but in a PDF format. At present, LOGCOM manages approximately 670 individual SL projects comprising 11M+ individual items for kitting and association to PEIs. The objective of this research is to maximize the ability to plan, procure, and kit SL material with limited fiscal resources. Final products should include a modeling and/or simulation tool to drive requirements determination for LOGCOM.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research the costs/benefits for different approaches to this problem and provide recommendations for implementation of a solution.

*REQUESTING/SPONSORING ORGANIZATION: LOGCOM and LX, HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Unmanned and Autonomous Systems

*TOPIC DESCRIPTION: Unmanned and autonomous systems, whether aerial or ground, are developing quickly to be more effective and less expensive than previous years. These developing technologies present new opportunities to improve Marine logistics and support distributed operations, while minimizing risk to Marines. Examine the cost/benefit analysis and potential concept of employment of current/developing technology of unmanned and/or autonomous systems to support tactical logistics functions.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: A researched review of Unmanned Logistics Systems (ULS) that examines at multiple levels and areas the cost/benefit analysis of utilizing these systems and recommendations for possible employment within Marine Corps units.

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Funding available for meetings (local travel)

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Unmanned Logistics Systems – Ground (ULS-G) in the Future Operating Environment

*TOPIC DESCRIPTION: A proof of concept study that reviews implications and develops areas of study surrounding the introduction and implementation of ULS-G vehicles into the Marine logistics network. Study would analyze capacity, capability, utilization, and gaps or possible solutions to said gaps.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: Currently, the Marine Corps has invested a large intellectual and monetary capital into the development of Unmanned Logistics Systems – Air (ULS-A), however has not been able to concurrently invest and explore the ULS-G arena due to limited resources. This study will build on lessons learned in the ULS-A development to inform concepts of operations, appropriate sizing to meet required throughput, and capabilities for these ground systems. The study would pioneer new approaches to this relatively unexplored field to provide the Marine Corps a design framework for consideration and development.

*DESIRED OBJECTIVES OF THE RESEARCH: A graduate-level researched paper that seeks to illuminate one or several of the following questions:
a) Develop alternative ULS-G requirements and assets to meet required ground supply distribution requirements.
b) Develop recommendations to improve Marine Corps ULS-G methodologies in relationship to the MOC/FCL to realize greater efficiency and effectives in distribution capabilities
c) Considering appropriately sized (Large, Medium, Small) equipment variants and approximating the ULS-G laydown in a MAGTF (systems with missions matched with units), we would seek to review leading and developing ULS-G vehicles to determine a method to measure and scope the capacity and capability of ground drones.
d) How might we analyze methods of organizing and maximizing efficiency of ULS-G?
e) How might a reliable method to control and guide ULS-G vehicles be developed?

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Funding available

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: USMC Modular Tactical Distribution in the Battlefield

*TOPIC DESCRIPTION: This study will inform on going logistics analysis for the potential use of small unmanned logistics capabilities providing just in time supply out to the fireteam level. The study will analyze and make recommendations for manpower and organizational structure to employ notional medium sized UAS (500-800 lb. payloads) and small sized UAS (50-250 lb. payloads). The medium logistics UAS may be employed from combat logistics battalions (CLBs) and the small logistics UAS may be employed by ground combat element battalions.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: This study needs to evaluate employment options for manpower and organizational changes to facilitate this concept. This study needs to also examine whether unmanned ground logistics systems could follow the same blueprint.

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Funding available

Technology

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Additive Manufacturing

*TOPIC DESCRIPTION: Additive Manufacturing (AM) is a process by which digital 3D design data is used to build up a component in layers by depositing material. Given the expeditionary nature of the Marine Corps and the Hybrid Logistics vision, AM is increasingly seen as a way to improve logistics and supply methods for the Marine Corps. Examine where and how to leverage Additive Manufacturing to improve Supply Chain Management in the garrison and expeditionary environment.

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Researched review of best business practices by private sector and other services and recommendations of specific venues to apply this technology into improving the logistics and supply chain network

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Limited funding available for meetings (local travel)

COMMENTS: Study would link student with various other AM and 3D printing studies in production with other universities.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Big Data and Bio-Metrics

*TOPIC DESCRIPTION: Improvements in data collection methods have expanded to the use of bio-metrics. This combined with big data, contributes to problems of collecting too much information without an appropriate or best practice established for its use in an efficient and effective manner. Research the use of bio-metrics and big data to determine possible installation security improvements that can be developed (e.g. EMT, Fire, Entry Control Points, and Perimeter Security). In the expeditionary environment with C2 and the Operational Cycle, how do we incorporate big data analysis and management into logistics C2 operations?

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research cost & benefits and provide recommendations for action and implementation for using big data and bio-metrics for possible employment on Marine Corps Installations.

*REQUESTING/SPONSORING ORGANIZATION: LX, HQMC Installations & Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Characteristics of Innovative Organizations

*TOPIC DESCRIPTION: Conduct a study to identify the key factors that influence innovation.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: There are numerous government, Department of Defense (DoD), Military Service, commercial, and non-profit organizations that have either been established as “innovators,” or whose mission includes “innovation.” The purpose of this topic would be to:

- Identify examples of successfully innovative organizations (i.e., not individuals), and explain why the organizations were innovative. The research and analysis should include historical and current examples.
- Conduct analysis to determine the key factors that were most influential for successful, innovative organizations.
- Identify common characteristics of innovative organizations.
- Identify any common obstacles to innovative organizations and how these obstacles were overcome.
- Determine how the key factors and characteristics of innovative organizations could be applied and/or adapted to Marine Corps innovation organizations.

*DESIRED OBJECTIVES OF THE RESEARCH: Comprehensive research and analysis that identifies key factors, characteristics, and lessons learned for consideration that could be applied towards Marine Corps innovation related efforts.

*REQUESTING/SPONSORING ORGANIZATION: Training and Education Command (TECOM) Future Learning Group

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DESIRED RESEARCH COMPLETION DATE: 06/01/2018

AVAILABLE FUNDING, IF ANY: None

COMMENTS: If this topic is accepted, the research needs to include information sources both internal and external to DoD/government due to the variety of innovation related initiatives and efforts.

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Encourage Innovation in Service Contracts

*TOPIC DESCRIPTION: Service contracts are currently designed and written as a protection method to ensure lowest bidder accomplishes a measured task without room to encourage performance beyond the base requirement or development of new methods which might be more efficient or effective. Research how can service contracts be structured to stimulate innovation?

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Research how can service contracts be structured to stimulate innovation? Provide cost/benefit analysis and recommendation for implementation.

*REQUESTING/SPONSORING ORGANIZATION: MCICOM and LX, HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Improving Military Acquisitions to Plan for the Incorporation of Future Technological Enhancements, Advancements, and Modifications

*TOPIC DESCRIPTION: Currently the acquisitions and contracting process does not encourage equipment to have an advancement capability or a “bolt-on” ability for new modifications or technological enhancements. So, when a new advancement or modifications in technology or sensors is developed it cannot be used because the platform was not designed to accept new additions or “bolt-on” enhancements. With systems of systems in new acquisitions of equipment, the overall system needs design capability to incorporate upgrades in a lower system or to receive modifications.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: Currently, Marine Corps ground vehicles are built as a system of systems that may or may not have complete communication. If an improvement or hack in one of the systems is developed then it cannot be used because it would not cooperate with other systems. So a system of older systems is in operation without the ability for an upgrade. For example, ground vehicles have sensors to read output and wear of the equipment. Currently the sensors are not all able to communicate with each other or to consolidate the data because of modifications and improvements in the technology that where “bolted-on” later.

*DESIRED OBJECTIVES OF THE RESEARCH: Research cost & benefits and provide recommendations for action and implementation for one of the following:
1. Are there changes to the acquisitions or contracting process that can be implemented to encourage incorporating future modifications?
2. In contracting, is it possible to encourage innovation in acquisitions to account for the ability for “bolt-on” technologies (ex. Use of Electronic Counter Measures (Duke) System in OIF and OEF)?
3. Looking at end-to-end data from creation on the vehicle to analysis and collection outside, what industry methods or best practices can facilitate or support this?
4. Marine futurists are looking at new equipment and advancements that will change warfare. Can Acquisitions look towards the “on the horizon” development and plan for potential reception of new enhancements to the equipment to keep pace like a futurist? Would this be beneficial?

*REQUESTING/SPONSORING ORGANIZATION: LPV-2 and LX, HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Lighten the Load

*TOPIC DESCRIPTION: In WWII, Marines hit the beaches with 35lbs of kit on them and won battles. Today's Marine has near 100lbs of kit being worn, as they patrol and fight along with a substantial logistics base footprint ("Iron Mountain") established to support the units. Examine the cost/ benefit analysis and potential concept of employment of current/developing technology to support "Lightening the Load" (robotics, individual solar panels, etc).

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Researched review of best emerging technologies that can free the logistics tether of Marine Corps units and provide recommendations of specific venues to apply this technology into improving the logistics and supply chain network.

*REQUESTING/SPONSORING ORGANIZATION: LPV-3 and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: Funding available for meetings (local travel)

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Sense and Response Logistics (S&RL)

*TOPIC DESCRIPTION: Sense and Response Logistics (S&RL) will influence future of logistics capabilities through information flow. This initiative looks to utilize equipment sensors to relay information that could be used to create predictive maintenance capability with ground equipment. Expected out of this would be many man-hours in recovery and maintenance costs while enhancing supply-chain responsiveness. How can the concepts can be looked at in a broader scale using research material available from the several years of working groups that have engaged on this topic? Examine the cost/ benefit analysis and potential concept of employment of current/developing technology of Sense and Respond Logistics (prognostics and predictive maintenance).

*DATE SUBMITTED: 26 April 2017

*DESIRED OBJECTIVES OF THE RESEARCH: Examine the cost/ benefit analysis and potential concept of employment of current/developing technology of Sense and Respond Logistics (prognostics and predictive maintenance).

*REQUESTING/SPONSORING ORGANIZATION: LPC and LX, HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

Training

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Logistics Training and Education Modernization

*TOPIC DESCRIPTION: DC I&L is dedicated to harnessing the intellectual power of our logisticians in academic settings to improve Marine Corps logistics in a variety of initiatives to include improving our training and education methods for Marine logisticians. Researching solutions for the following questions would contribute to Marine logistics innovation and advocacy.

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: 1. Research and determine the costs and benefits of taking the 13 existing CSS T&R Manuals and reorganizing them in a way that better supports the design, planning, execution, and measurement of collective training in the LCE. What should that method look like?
2. Research and determine the training and education gaps within the 04XX and 30XX OccFlds, particularly for Officers. Identify them and provide recommendations to reduces these gaps using existing military training schools (modification or sister service school) or creation of a new school.
3. Research the comparisons between the US Military reorganization to support mechanization in WWII and the need for reorganization to support the current surge of innovative technology today. What lessons learned or initiatives are applicable for future reorganizations? What has proved successful or failed from the WWII realignment? Based on a historical perspective, what is the optimal LCE design for the future operating environment?
4. Research and determine methods or practices to improve our logistical interface with the Army – equipment, training, technology, information, or processes.
5. Research methods and provide recommendations for preparing Marine logistics units and staffs to plan for tactical through strategic level logistics.
6. Considering that much of DoD logistics information systems are on unclassified networks, and considering that for the most part these same systems are becoming technologically outdated how should we progress forward?
7. With the development of Marine Corps Reference Publication (MCRP) 5-1C Operation Assessment for the Ground Combat Element (GCE) Assessments, should the Logistics Combat Element (LCE) have an LCE Assessments publication as well?

*DESIRED OBJECTIVES OF THE RESEARCH: Research cost & benefits and provide recommendations for action and implementation for one of the above.

*REQUESTING/SPONSORING ORGANIZATION: LPC and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Marine Corps Ground Equipment Fabricator

*TOPIC DESCRIPTION: The goal of the study is to conduct a job requirements and competency based job analysis to identify the necessary Knowledge, Skills, Abilities, and Other characteristics (KSAOs) necessary to perform the United States Marine Corps (USMC) Military Occupational Specialty (MOS) of 1316, Metal Worker and MOS 2161, Machinist. The end state of this analysis is to determine if the two MOSs can be merged to create a singular MOS, Metal Fabricator, and at what point in the Marine's career this can occur. Additional consideration must factor the forthcoming technological capability of additive manufacturing and the necessary KSAOs to perform the required job tasks. The results must yield whether a merger is achievable, prudent, cost effective, and supportable. Factors must include Department of Labor O*NET data, MOS credentials, Training and Readiness Tasks, and Table of Organization/Equipment data; to include how many Marines currently comprise the MOS and legacy and future equipment sets that drive job task requirements

*DATE SUBMITTED: 26 April 2017

*EXTENDED TOPIC DESCRIPTION: The Formal Learning Center (FLC) for both MOSs, located at Ft. Lee, VA, has identified a human capital resource gap whereby current human resource training and development strategies do not meet the desired requirements of the Operating Forces based on empirical feedback from the Operating Forces and historical throughput data. This gap potentially requires a shift in MOS education, skillset. Furthermore, current succession plans do not allow for career progression and the capitalization of attained skill sets throughout a Marines career. Throughout the past two decades the Marine Corps has procured equipment sets, which require additional KSAOs to maintain in comparison to the currently trained skill sets of welding and machining. In addition to these new requirements, the capability of additive manufacturing is now a reality and must be factored into all future sustainment strategies of Marine Corps equipment. The FLC has witnessed a gap in student throughput over the course of the past three fiscal years based on KSAO deficiencies, with almost 10% of MOS 2161 and 17% of MOS 1316 students that require retraining in order to pass comprehensive examinations and obtain the MOS. Moreover, one MOS 2161 student and four MOS 1316 students were reclassified for other MOS assignment. The FLC has also recognized that the current organizational structure and career paths of the two MOSs do not allow for the full utilization of obtained KSAOs throughout a Marines career.

*DESIRED OBJECTIVES OF THE RESEARCH: A graduate-level researched paper that seeks to illuminate one or several of the following questions:
1. Identify necessary MOS prerequisites (competencies, i.e., MM Score, vision, etc.) for each MOS.
2. Identify required KSAOs for each MOS to successfully perform MOSs.
3. Identify additional training requirements with the addition of additive manufacturing.
4. Identify at what point in a Marine's career, if allowable, the two MOSs could merge to become a "Fabrication" MOS.
5. Consider the broader impacts of a developed Metal Fabricator MOS to the Marine Corps at large with respect to manpower, supply, and maintenance.

*REQUESTING/SPONSORING ORGANIZATION: LPV and LX , HQMC Installations and Logistics

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DESIRED RESEARCH COMPLETION DATE: 16 Mar 2018

AVAILABLE FUNDING, IF ANY: TBD

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: Review of Infantry Officer Course Hike Standards and Applicability to Regular and Recurring Infantry Duties

*TOPIC DESCRIPTION: The purpose of this study is to examine the history of current Infantry Officer Course (IOC) Hike Standards and how applicable they are to the regular and recurring duties of Infantry Marines.

*DATE SUBMITTED: 27 April 2017

*EXTENDED TOPIC DESCRIPTION: Various statutes require that physical standards for military occupational specialties be occupation specific, operationally relevant, gender and age neutral, assess individual capabilities and based on regular and recurring duties. To date, there has been no expansive examination of how IOC hike standards came to be and how current standards comply with relevant statutes.

*DESIRED OBJECTIVES OF THE RESEARCH: -To determine how applicable IOC hike standards are to the regular and recurring duties of Infantry Marines
-To determine if IOC hike standards comply with relevant statutes regarding establishment of MOS standards

*REQUESTING/SPONSORING ORGANIZATION: TECOM Force Fitness Division

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DESIRED RESEARCH COMPLETION DATE: End of AY2017-2018

*CLASSIFICATION: UNCLASSIFIED

*RESEARCH TOPIC TITLE: The Value of Firing 155mm in Training Artillery Units

*TOPIC DESCRIPTION: Since the cost of 155mm artillery rounds represents 60% of the ammunition budget for TECOM, it is in the interest of the Marine Corps to determine how much training bang there is per buck.

*DATE SUBMITTED: 26 Apr 17

*EXTENDED TOPIC DESCRIPTION: To an outside analyst, the training value to artillery units of actually firing the current volume of 155mm rounds is somewhat obscure. Firing lines assemble, load and fire the rounds, then adjust the gun and/or displace. Forward observers watch rounds impact, then call adjustments and wait for the next impact. Since observers can train to standard in simulators, and gun lines can conduct “dry fire” training to work on speed of adjustments and displacement, what is the value to the Marine Corps to fire so many rounds and is it feasible to fire many fewer and achieve the same readiness?

*DESIRED OBJECTIVES OF THE RESEARCH: Objectively determining, independent of the empirical amount of firing, how many rounds an artillery battery must fire per year to be ready. If the objective and empirical amounts of fire are the same, what would be the measureable impact of a 20% reduction in 155mm training ammunition?

*REQUESTING/SPONSORING ORGANIZATION: TECOM MTESD Operations Branch Futures Section

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DESIRED RESEARCH COMPLETION DATE: May 2018

AVAILABLE FUNDING, IF ANY: $1200

COMMENTS: Research from this topic will dovetail with efforts within TECOM MTESD of compiling empirical firing data related to particular Artillery Training & Readiness events to compare amount fired related to events trained related to readiness reporting.