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14. ABSTRACT As the DoD ends its commitments in Iraq and Afghanistan, it finds itself transitioning to leaner force structures and reduced budgets. The current methods for sustaining ground forces do not meet the criteria of both the President and the Commandant that the Marine Corps needs to be a light, efficient, and self-sustaining temporary guest of the nation that we are operating in. The way the Marine Corps is provisioned is influenced by a variety of organizations and processes, over which they have limited control except at the tactical level. An emphasis on conducting joint logistics and on using the most efficient means of procuring, delivering, and preparing food supplies has led to a web of interdependence upon other services, government agencies, and even agreements with other nations. This paper examines how ground forces are provisioned, and what led to doing it that way. The extravagance of the contracted facilities overseas indicates there is a better way to solve the problem, but research reveals a complex relationship between industry and the military where profit margins often outweigh more tactically sound solutions. This paper offers factors to consider when faced with the future reality of restrained resources.					
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United States Marine Corps
Command and Staff College
Marine Corps University
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Marine Corps Combat Development Command
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FEEDING THE DEVIL DOGS OF WAR

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AUTHOR:


Major Christy L. McCutchan, United States Marine Corps

AY 12-13

Mentor and Oral Defense Committee Member:

Approved:


Date:

 Dr. Robert B. Bruce
05/03/2013

Oral Defense Committee Member:

Approved:

Date:

 Dr. Bradford A. Wiresman
5/3/13

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Preface

Over the course of four separate deployments to Iraq between February 2003 to July 2008, each ranging from seven to 13 months, I had the opportunity to observe how ground forces were sustained. There was a noticeable evolution over time, from a feeding plan based strictly on packaged rations during the initial phase, to the option of having anywhere from two to four hot meals per day at the contracted dining facilities established during phase IV operations at the larger Forward Operating Bases. The latter was not a privilege enjoyed by those furthest forward, who arguably rated it the most for spending the majority of their time in harm's way. The portion sizes and the variety of food items available during each meal in many of those contracted dining facilities were also astonishing. They far exceeded what I've personally observed at any of the garrison chow halls at the Marine Corps' largest CONUS installations: Camp Pendleton, Camp Lejeune, and Marine Corps Air Ground Combat Center Twentynine Palms.

Additionally, during one of these deployments, I had the opportunity to work with the military training teams as we assisted in developing a self-sustaining logistics support capability for the new Iraqi Security Forces. During another, I served as a member of Iraqi engagement teams that worked with both women's groups and municipal leaders. These experiences led to frustration with the way we as Americans handled host nation food, whether due to procedural roadblocks that prevented the teams from buying local food despite a legitimate need, or the general fear of eating it when the opportunity presented itself.

As a logistician, all of these experiences collectively led me to question both how our forces are provisioned, and what has led us to doing it that way. This paper attempts to explore those questions, as well as question whether there is a better way of doing business in the future. The

perceived extravagance and wastefulness of the contracted facilities overseas seems to indicate that there is, but as the research reveals, there is a complex relationship between industry and the military, and profit margins often outweigh more tactically sound solutions. As Martin Von Creveld did in *Supplying War*, I will limit my exploration of this topic to the feeding of ground forces, as the chain of supply for the Marine Corps in ground combat operations is more closely intertwined with the Army than the Navy, despite its amphibious nature. However, unlike Von Creveld, I will primarily use American history due to the unique nature of being a nation that has typically had to fight outside of its borders since the Spanish-American War, and as a result has had unique lessons learned with regards to how to provision its forces.

I would like to acknowledge the support of my mentor, Dr. Robert Bruce, for his patient efforts to help me focus my area of research, and Dr. Bradford Wineman for his pointed questions that assisted me in identifying gaps in my arguments. In addition, I am grateful for the encouragement of my faculty advisors, LtCol Joseph Cross and Dr. W. John Gordon. By helping me overcome the initial, lengthy writer's block that led to many a long day in Gray Research Center in Quantico, they enabled me to explore an unappreciated but important aspect of military sustainment, and along the way, challenge some of my own initial biases and assumptions.

Executive Summary

Title: Feeding the Devil Dogs of War

Author: Major Christy L. McCutchan, United States Marine Corps

Thesis: As we venture forward into fiscally leaner times, it is reasonable to analyze whether the current methods for sustaining ground forces meet the criteria of both the President and the Commandant by enabling the Marine Corps to be a light, efficient, and self-sustaining temporary guest of the nation that we are operating in.

Discussion: The way that the Marine Corps feeds itself is influenced by a variety of organizations and processes, over which they have limited control except at the tactical level. An emphasis on conducting joint logistics and on using the most efficient means of procuring, delivering, and preparing food supplies has led to a web of interdependence upon other services, government agencies, and even agreements with other nations. Whether through operational rations packaged in the U.S. or contracted food trucked in from approved external sources to be prepared locally, most contemporary sustainment options are logistics intensive and dictated by strict procedures. This paper examines how ground forces are provisioned, and what has led to doing it that way. In addition, it questions whether there is a better way of doing business in the future. The perceived extravagance and wastefulness of the contracted facilities overseas seems to indicate that there is, but as the research reveals, there is a complex relationship between industry and the military, and profit margins often outweigh more tactically sound solutions.

Conclusion: Throughout history, a combination of methods has been employed to provision the military. From contracted support brought in from remote locations, to allowing the opportunity to buy locally to meet nutritional requirements, there are merits and disadvantages found in each. The important factor for planners is to consider the environment and the guidance, and make appropriate, sustainable decisions. The ways that we have provisioned forces in the past give us options to consider relative to the operating environment, rather than strict models that we must continue to adhere to blindly in future conflicts. This paper does not recommend a radical change in how forces are provisioned, but instead offers factors to consider when faced with the future reality of restrained resources.

*"They talked patronizingly of the war, and were concerned about rations."*¹

INTRODUCTION

Veterans of conflicts from throughout American history have always had something to say about how they were fed in combat. Whether it was questioning where their provisions were, as was the unfortunate experience for many a Revolutionary War soldier, or bemoaning the palatability of packaged rations as those from WWI through Operation Enduring Freedom have done, food has always been a topic of discussion. And for most service members, casual conversation is as far as their interest extends when the logistics system is able to deliver their sustainment requirements.

However, as the Marine Corps prepares to reduce its force structure at the same time it faces reduced operations and maintenance funds, it will be useful to consider how we will continue to sustain future fights that the MAGTF finds itself engaged in.² Previously a force which took great pride in doing more with less, the past decade has taught the Marine Corps bad habits in terms of seemingly unlimited budgets with which to rapidly source materials, and to contract freely for logistics support and services. Therefore, in addition to questions about whether the forces and equipment left will be adequate to accomplish the missions we anticipate, it would be useful to consider if our resources and current sustainment practices make sense. As the 35th Commandant of the Marine Corps, General James F. Amos, has stated in his planning guidance and numerous other forums, the Marine Corps is "a balanced air-ground-logistics team...capable of operating independent of local infrastructure."³ President Barack Obama has also stated that "Whenever possible, we will develop innovative, low-cost, and small-footprint approaches to achieve our security objectives, relying on exercises, rotational presence, and advisory capabilities."⁴ Clearly, the guidance from the Executive and service levels provides

numerous challenges for the logisticians responsible for sustaining the force, and the need to feed ground forces is among the most fundamental types of support required. In the immortal words of Napoleon, an Army marches on its stomach, and the basic life-sustaining necessities of the modern Marine Corps are no different than the soldiers of that era. Therefore, as we venture forward into fiscally leaner, structurally smaller times, it is reasonable to analyze whether the current methods for sustaining ground forces meet the criteria of both the President and the Commandant by enabling the Marine Corps to be a light, efficient, and self-sustaining temporary guest of the nation in which we are operating. To that end, this paper will look how conventional ground forces are fed based on current doctrinal procedures, and examine the rationale behind doing it that way in order to assess its validity.

HOW THE MARINE CORPS FEEDS ITSELF

The Marine Corps prides itself on self-sufficiency and the ability to perform under even the most austere conditions, and considers those characteristics key selling points regarding its utility as a service. It organizes, equips, and trains forces to be ready to deploy with the minimum amount of time and resources required. The organization of the Corps into an air-ground task force was initiated in 1913 with the creation of the Advanced Base Force. Throughout WWI and WWII, this concept showed its merit by allowing the Marine Corps to begin to package itself as a combined arms force complete with organic logistics support at the tactical level. The introduction of helicopters during Vietnam allowed for more responsive sustainment across longer lines of communication. The ABF was reorganized several times, eventually evolving into the Fleet Marine Force, which was a precursor to the MAGTF. In terms of sustainment, even those early organizations included service organizations, within which were messing companies that shared the same basic baking and cooking responsibilities as their Army

counterparts. Throughout the history of the Marine Corps, its method of feeding, whether in garrison or in combat, has closely modeled what the larger Army has done. In addition, there are likely to be few opportunities in the future for any of the Services to conduct operations independent of each other due to the unique but complementary combat and support capabilities each one provides. As a result, the logistics processes and organizations will become increasingly joint-focused, and it is relevant to look at all the key players involved in how the Marine Corps feeds itself.

Joint logistics support

Joint Publication (JP) 4-0 lays out the basic premise for logistic interdependence in the Executive Summary, stating that “joint logistics is an essential component of joint operations because the Services, by themselves, seldom have sufficient capability to independently support the joint force.”⁵ In addition, because the guidance is authoritative, it is expected to be followed “except when in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, [JP 4-0] will take precedence” unless the Joint Chiefs of Staff provide different guidance.⁶ This lays the groundwork for why Marine Corps logistics operations often must conform to processes that may appear to be contradictory to an organization that prides itself on being self-sufficient by maximizing reliance on organic resources. However, it is difficult to argue that a Marine Corps commander’s overall support expectations are significantly different than the other Services. As former CJCS Admiral Mike Mullen wrote in JP 4-0, “The joint force commander expects joint logistics to give him *sustained logistic readiness* which will provide *freedom of action* to effectively execute operations in support of national objectives.”⁷

Strategic-level logistics

At the strategic level, logistics support is comprised of all efforts associated with translating the fruits of the US industrial base (government and commercial industry) to sustaining the missions assigned to the DOD. The strategic-level logistics capabilities are based upon analysis of the mission, and the requirements generated by the operating forces⁸ assigned to the mission. The combatant commander and his staff “plan and oversee logistics from a theater strategic position” and assign the various service components the responsibility to support themselves except when participating as part of a joint or multinational force.⁹ Regardless of the exact composition of the force, the strategic level commander is responsible for getting the materiel, including Class I supplies, into the theater of operations for follow-on storage and distribution.¹⁰

In the joint context, there are several key players at the strategic level that are associated with the flow of supplies, to include Class I. These “key global providers in the JLE are the Services, the Defense Logistics Agency (DLA), United States Joint Forces Command (USJFCOM) and United States Transportation Command (USTRANSCOM).”¹¹ DLA’s relationship to the Marine Corps will be defined in subsequent sections. The role of USJFCOM will not be explored; however, the interdependent relationship between the US Army and the Marine Corps will be. USTRANSCOM, which includes the Military Sealift Command and Air Mobility Command, plays an important role for all of the services and combatant commands. It is “responsible for providing common-user and commercial air, land, and sea transportation, terminal management, and aerial refueling to support the global deployment, employment, sustainment, and redeployment of US forces.”¹² In other words, a significant percentage of the personnel, equipment, and supplies associated with accomplishing military objectives are moved by USTRANSCOM. More specifically, all food sourced within the US via the DOD supply

chain is transported to a theater of operations using USTRANSCOM organic or contracted assets.

Defense Logistics Agency

The Defense Supply Agency, based on the Market Center system used during WWII, was established in the 1960s in an effort to consolidate the procurement of supplies common to all branches of the armed services. The goal of establishing centralized control was to simplify ordering of perishable and non-perishable supplies, enable better inventory control and presumably responsiveness to demand, and prevent duplication of purchases.¹³ The organization now known as Defense Supply Center Philadelphia (DSCP) was established in 1965 to consolidate the purchasing of subsistence, clothing, and medical supplies. The Defense Supply Agency was renamed Defense Logistics Agency (DLA) in 1977, and took over most contracting for military supplies, with the exception of subsistence which remains the responsibility of DSCP.¹⁴

Among its many contemporary responsibilities, the DLA is responsible for dining hall support to all the services, as well as some non-military federal organizations. They advertise that “through the Subsistence Prime Vendor (SPV) program and direct vendor delivery, customers can receive their food 48 hours after placing an order.”¹⁵ They also assign account managers to each location to oversee product delivery and ensure quality of service and goods is maintained. As the Executive Agent (EA) for subsistence and other supplies as designated by the Secretary of Defense, the Director of the DLA is the single point for “continuous, sustainable, and global end-to-end supply chain support as required by end users.”¹⁶ The DLA has been proactively attempting to bridge the gaps between the strategic, operational, and tactical levels of the supply chain, and across service boundaries through use of Joint Integrated Process

Teams. These teams have participated in exercises with various DoD components including the combatant commands, which assists in defining roles and responsibilities as well as ensuring the appropriate resources are available, both on the agency side as well as the military side, to accomplish the mission. The EA advertises that it directly supports the DoD's efforts to "implement a distributed and adaptive logistics capability."¹⁷

Operational-level logistics

To connect strategic resources to the tactical organizations, "the Marine component commander is responsible for conducting operational logistics and coordinating operational logistic support with tactical logistics organizations."¹⁸ The Marine Corps can accomplish this through a variety of means. For operations involving force projection from Navy ships, such as traditional amphibious operations, supplies can be drawn from war material reserves. This typically consists of 60 days of critical supplies such as Class I (subsistence), Class III (petroleum, oils, and lubricants, and Class V (ammunition), in order to provide reasonable assurance of self-sustainment until a standard resupply chain established. Utilization of afloat stocks maintained by the Maritime Prepositioned Force squadrons can supply about 30 days of supplies, as well as the equipment required to outfit a MEB-sized MAGTF of about 15,000 personnel. The land prepositioning materiel maintained by Marine-Corps Prepositioning Program-Norway can also provide 30 days of supplies and the equipment to outfit a MEB.¹⁹

Over the past two decades, the requirement for a Marine Corps organization capable of handling the reception and throughput of the massive quantities of supplies sufficient to support the deployment of a reinforced Marine Expeditionary Force (MEF) has resulted in innovative approaches to utilizing existing Marine logistics forces. In the case of the Operation DESERT SHIELD and DESERT STORM, the commanding general of 1st Force Service Support Group

(FSSG), drawing upon lessons learned from Vietnam, suggested having direct and general support logistics organizations.²⁰ The concept was to task organize an FSSG (the MEF-level combat logistics element) to provide general support logistics and serve as the operational level logistics organization in theater, responsible for providing theater-supported logistics to all forces in the assigned area of operations. The other FSSG would be responsible for providing direct support logistics to the MEF units. This successful concept was revisited during Operation IRAQI FREEDOM. However, while both FSSGs operated under a single commander that reported to the MEF during Operation DESERT STORM, during Operation IRAQI FREEDOM the general support FSSG served directly under Marine Forces Central Command (MARCENT). Therefore, MARCENT retained the responsibility for logistics support to all Marine forces within the Central Command theater of operations, thereby allowing the MEF to focus on fighting the campaign.²¹

In addition to the Marine Corps' special relationship with the Navy, "cross-service support is appropriate when there are standing Department of Defense procedures for common-item support (e.g., for material managed by the Defense Logistics Agency [DLA]) or there are existing inter-service support agreements..."²² Certain types of support can be authorized in support of joint expeditionary operations. These include authorization of cross-service support by commanders of unified forces, and specific support agreements generated with the host-nation or within coalitions. The lean structure of the MAGTF lends itself well to a rapid deployment capability; however, when called upon to conduct sustained operations ashore, it is usually as part of a joint or combined force.²³ This typically translates to a length of time beyond what its limited organic storage and transportation capacity was designed to support, so the Marine component commander will be compelled to request cross-service or cross-national logistics

support. All of these are examples of measures taken by the Marine Corps to ensure the resiliency to overcome the uncertainty of combat operations that might result in supply disruptions, and the endurance required to sustain operations before theater-level supply is established.²⁴

Tactical-level logistics

Joint doctrine acknowledges that “At the tactical level, logistic support is Service oriented and executed.”²⁵ Since the MAGTF typically fights at the tactical level, this in part results in the perception that the Marine Corps should be self-sufficient when deployed. This does not mean that it should be able to do so indefinitely, and that support from other Services is never required: “Tactical-level logistics capabilities are a primary element of a self-sufficient MAGTF, which is supported externally through the logistic activity at the strategic and operational levels.”²⁶ This external support comes from many resources, to include coalition partners and even the host-nation. With regard to host nation support, the Marine Corps’ publication on tactical-level logistics states, “When feasible, MAGTF plans should make maximum use of host nation support available within the theater of operations” to augment MAGTF capabilities.²⁷ However, the same publication clearly states that this support should be used to *enhance*, not substitute, the essential capability of MAGTF to self-sustain.

Within a deployed environment, the LCE of the MAGTF is responsible for providing the supply and resupply capability, above the organic capacity of its supported units, during the initial phases of an operation until a distribution pipeline is established, linking the supporting establishment to the theater of operations.²⁸ Logistics planning should address numerous factors. For example, guidance on what the basic load consists of, which includes how many days of supply of class I subsistence is to be carried by each unit, as well as the individual load specifying

the number of meals each Marine will bear. This, as well as other supply factors, will vary depending upon the role or phase, such as whether it is during the landing or once ashore, and shouldn't exceed organic transportation capacity of a unit. Prepositioned emergency supplies, such as "floating dumps" of prepackaged subsistence, ammunition, and other critical supplies staged upon on assault or landing craft; or pre-staged helo-lifted supplies that are also avail on-call, build in flexibility to withstand emergencies.²⁹ In addition, the remaining supplies are staged aboard the Navy shipping or other mode of transport into theater for follow-on echelons moving to the shore. Sustainment in this case refers to the supplies beyond what the Marine Corps brought with them, which originate from other sources or arrangements including host nation support or ISSA.

Contracted wartime logistics support

In 1780, contracting was first introduced by Congress as a way to feed the Revolutionary War forces, and while this initially resulted in more reliable delivery (as well as a side benefit of a greater variety of food items being available), it also allowed the opportunity for the contractors, or sutlers, to profit handsomely at the soldiers' expense.³⁰ Contracting has been used to some degree during every subsequent war to provide support to the US military. Since 1962, the Army Materiel Command has been the primary provider of materiel, including subsistence, to the Department of the Army. The motto of the AMC is, "if a Soldier shoots it, drives it, flies it, wears it, communicates with it, or **eats it** (emphasis added) – AMC provides it."³¹ The AMC further delegates sustainment responsibility to the Army Sustainment Command, which provides the link to contract support by identifying unfulfilled Army requirements that can be met by corporate capabilities. Since its establishment in 1985, the Army has utilized the Logistics Civil Augmentation Program (LOGCAP) to perform logistics functions that it does not have the

personnel or resources to accomplish, or to free up personnel for other missions. The purpose of LOGCAP is to resolve support unit shortfalls in operations plans; consider conversion of existing support units based upon available contracted support; provide rapid contracting capability for contingencies not covered in the operational plans; and provide augmentation via contracting to support mobilization.³² Initially used in support of the Army Corps of Engineers to assist with building oil pipelines in Southwest Asia, LOGCAP was again utilized to provide support to UN forces in Somalia and starting in 2002, has played a leading role in supporting OIF and OEF forces. The dining facility support provided by Kellogg, Brown, and Root (KBR, Inc) in Iraq was the source of significant scrutiny for perceptions of waste, and public outcry over their no-bid contract that the media tied to connections with the Vice President. However, the DoD has stood by the company due to the fact that even when similar contracts were offered for bid, KBR, Inc was the only company able to provide the support detailed in the Statement of Work.

On paper, the use of contracted logistics support is an approach seems logical and sustainable – it is all a matter of money, which has been seemingly limitless over the past decade. As later sections will illustrate, based on the current strategic guidance on how to conduct operations, not only may the cost be prohibitive, but this may not be the approach that is most suited for future contingencies. Also, it is interesting to note that while the Marine Corps’ tactical-logistics publication contains a mere page on messing guidance, one message is clear. It states that units that possess organic food service capability as authorized on their T/O and T/E are responsible for providing their own food service support. It also presents an important piece of guidance regarding field messing that has been overlooked during OIF and OEF: “In combat operations, field messhalls are normally established at the battalion level” and large messhalls (defined as

having greater than 2,000 person capacity) are “not recommended because [they] can be targeted easily by the enemy.”³³

Messing and Food Service Support: Marine Corps Service Responsibility

The preceding paragraphs focused on the means by which provisions arrive at the tactical level. The following paragraphs will discuss types of subsistence and the personnel involved in messing. According to the Marine Corps section of the Universal Naval Task List, messing is an essential task assigned to the CSS element (CSSE) to provide food service support to all other elements of the MAGTF, regardless of size.³⁴ The specific task to provide messing includes the following responsibilities:

The CSSE is responsible for supplying class I (subsistence) to all elements of the MAGTF and providing personnel and field food service system support to the combat element (CE) and the ground combat element (GCE), as required. Organizational food service responsibilities include: accounting for all subsistence received from the CSSE; storing properly all semi-perishable and perishable supplies; ensuring sanitation during the preparation of meals; preparing quality meals; accounting of personnel fed; and, filing reports. Field feeding operations consist of distributing one packaged operational ration (POR) and two hot meals (unitized rations) per day. Deployments initially begin exclusively with PORs progressing to meals with unitized rations.³⁵

Food service officers are appointed in every unit that operates a field messhall, and their responsibilities include recommending appropriate sites (which is particularly key due to higher potential for food poisoning in less sanitary field conditions, as well as for force protection); deciding the size and durability of the facility; and designating which units will be supported, which is important for determining the right amount of food to have on hand. The food service officer may be a member of the unit’s staff, such as the S-4 logistics officer, but should be an

actual 3302 Food Service Officer, who has received formal training and is a warrant officer or limited duty officer who previously served in a food service related MOS.

In dining facilities at military installations afloat and ashore, the uniformed food service specialists – those who possess the 3381 MOS - are up well before those that they will be serving, and long after the last person finishes their meal, the cooks will be involved in the myriad of duties associated with cleanup and prep for subsequent meals. Easily overlooked, particularly when the food is of sufficient quality and quantity, these personnel are vital to mission accomplishment for many reasons. Even in a garrison environment, the timely feeding of large groups of personnel ensures that they have more time available for training and other duties. The messhall provides a respite where the Marines can gather to socialize and rest for a few moments before returning to their training or other assigned duties.³⁶ The attention to detail and personal touches that the cook invests in the food he prepares makes a difference to those being served. In tough training exercises and during combat deployments, this is even more important. The average Marine looks forward to chow time, as the meal can represent one of the few pleasurable moments in their day.

Modern operational rations

Packaged operational rations are important to the modern Marine Corps because they allow the Service to provide timely, responsive support when directed by the President. The ability to have complete packaged meals that are resistant to spoilage and durable enough to be transported through tactical means, to include being dropped out of aircraft, means that the Marine Corps does not need to rely on anyone else initially for nutritional needs. A series of food innovations allowed the US military to continue to make progress in their efforts to safely store and transport food intended for the front lines. Pasteurization and canning were used by the French and British

navies in the 1800s. Advances in food dehydration during the American Civil War, and the increasing availability of refrigeration, also contributed to less spoilage and higher variety and quality of rations. Despite these efforts, “prior to its entry into (WWII), the United States still lacked a nutritionally balanced, palatable, easily transportable ration for combat conditions where field kitchens could not be established.”³⁷ Recognizing the logistical advantage that that pre-packaged meals could provide, the Quartermaster Subsistence Research Laboratory was established, which “marked the inauguration of modern ration research” and was the precursor to the U.S. Army's Research, Development and Engineering Center (NSRDEC).³⁸ The NSRDEC, located in Natick, Massachusetts, is often simply referred to as Natick. The Combat Feeding Directorate (CFD) of the NSRDEC provides "a joint service program responsible for research, development, integration, testing, and engineering for combat rations, food service equipment technology, and combat feeding systems."³⁹ Through eight teams of scientists and engineers, the CFD researches and develops new combat feeding and packaging techniques and technologies for the armed services. Natick serves as the product manager (PM) for all force sustainment systems, and works closely with the DLA and industry to meet the operational ration requirements of the military.

Various types of rations are used to support both training exercises and combat deployments, including PORs, unitized B-rations (UBR), modular tray packs (MMTP). PORs such as MREs, cold weather rations (RCW), and shelf-stable bread (BSS) are designed to be used in the initial phases of an operation, have a long shelf-life, and do not require any support to prepare them for eating. UBRs are semi-perishable items packaged in 100-person modules that are individually palletized.⁴⁰ The UBRs require both school trained food service specialist (at a ratio of one per 75 individuals served), plus one messman (per 50 individuals served; sourced

from the unit and provided OJT by the food service specialists) in order to properly prepare the rations.⁴¹ MMTPs use the tray ration heating system (TRHS) to heat trays containing a complete meal for 18 people. The tray rations require food service specialist support at a ratio of two cooks per 250 meals served. MMTPs provide an option besides MREs for smaller or more mobile units that do not have access to the UBRs prepared at messhalls.

The Marine Corps has benefited from the research and development largely accomplished by the Army and other government organizations such as Natick, although innovations at the tactical level have occurred. One of the greatest differences between the two services is that the Marine Corps as an amphibious force has to plan for sustainment aboard naval shipping as well as in support of amphibious operations from the ship to the shore, and beyond the beachhead. In organizing into MAGTFs of varying sizes, the following levels of subsistence have become standard. For a Marine Expeditionary Unit, the expectation is that sufficient packaged rations will be available to sustain the entire force for 15 days. For a Marine Expeditionary Brigade that number increases to 30 days of food, and at the Marine Expeditionary Force the requirement is for 60 days of stockage. For the larger MAGTFs, this does not mean that they carry that much food with them – the access to those quantities are primarily accomplished through the use of the packaged rations stored aboard the Navy warships or MSC vessels including the MPF squadrons, which enables the force to be light yet still responsive.

THE MODERN CHALLENGES OF FEEDING THE MARINE CORPS

In modern conflicts, the Marine Corps has tended to start with MREs, transition to group rations, and as soon as the security conditions will allow, shift almost exclusively to contracted food service support. There are alternatives to contracting that have been used in the past, such as stockpiling supplies, foraging, buying locally, and even gardening. The ability to use alternate

subsistence methods that were successful in specific locations in the past has been limited.

Whereas foraging or living off the local economy used to be an option available to commanders, there are several factors to consider. Although the US is fortunate in that it is able to produce more food than required by her citizens, not every country is as fortunate. Food shortages have affected countries of all sizes, and ensuring access to safe and reliable supplies of food for their population tends to be a priority for most governments. For them, food is an element of national security, and food security is a very real concern.

Food security

The World Health Organization (WHO), defines food security using three pillars: 1) Food availability: sufficient quantities of food available on a consistent basis; 2) Food access: having sufficient resources to obtain appropriate foods for a nutritious diet; 3) Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation.⁴²

Food security is mentioned seven times in the 2012 National Security Strategy, in the context of its effect on regional stability and global health, and the idea that access to food is part of basic human rights, in that freedom “includes freedom from want.”⁴³ Therefore, due to local food shortfalls, it would be foolish for the US to assume that it will be able to use the food resources of every nation whose territory it must occupy to conduct a campaign.

However, food availability may be influenced. The US Agency for International Development and many other government and non-government organizations throughout the world currently provide resources that assist low-production countries. This includes assistance with technology and techniques to grow more crops, such as better seeds, more potent fertilizer, and choosing crops that are better suited to the unique characteristics of the available farmland.⁴⁴ This has strategic implications because increase in food security may contribute to an increase in

the overall stability of a country or region, as well as allow for local subsistence options. The tempo of an operation can be stalled by insufficient availability of food, and the fighting ability of the soldiers can be diminished by food that is insufficient in quality or quantity. The concept of growing some of our own subsistence is also not a new one: After observing the success of the French and British armies in growing vegetables in the rear areas of their combat forces, the Americans decided to follow suit. The Gardens Bureau of the Quartermaster Corps distributed seeds and seedlings in order to allow camps and hospital areas to grow vegetables. This effort paid off, with 6,951,000 pounds of vegetables being grown on nearly 1500 acres in the summer of 1918 alone.⁴⁵ Therefore, while it may be a stretch, the potential for the Marine Corps to replicate the successes of the Gardens Bureau during WWI by growing some of the food needed for resupply should not be discarded if it provides some relief from the reliance on extended supply lines.

Food safety

A significant obstacle towards allowing the Marine Corps to forage or otherwise subsist off the local economy is tied to the concern over the quality of food sources and the associated concept of food safety. Food safety refers to measures taken to ensure that the food is fit for consumption, although how that is measured can vary widely. Interestingly, American public concern for food safety seems to have been initiated in part by the Army's experience with "rotten meat" during the Spanish-American War. That experience, combined with new awareness provided by writing such as Upton Sinclair's novel *The Jungle*, which described the deplorable conditions of the meatpacking industry at the time, led to the passage of several acts aiming to improve food safety and sanitation.⁴⁶ The Quartermaster Corps had begun hiring veterinarians in 1900 to conduct meat inspections, but the Meat Inspection Act of 1906 had a

direct impact on the way that the Army approached the inspections by establishing sanitation standards and requiring federal inspectors in slaughterhouses. The Army Veterinary Corps was established in 1916 as part of the National Defense Act, and beyond traditional service animal care, their responsibilities included inspection of meat, poultry, and seafood products, as well as the locations that those items were processed.⁴⁷

Food regulation

The organizations responsible for food safety in the U.S. have expanded dramatically since that time. At the federal level food safety oversight is provided by 10 different agencies within four cabinet level federal departments: Agriculture, Commerce, Health and Human Services, and Treasury. In addition, the Federal Trade Commission and the Environmental Protection Agency also have a role in food safety.⁴⁸ Between these 12 agencies there are significant differences in the approach to food safety, such as variations in inspection frequency and the degree of scientific basis used in evaluation. With over 35 different laws, some that are over 100 years old, and a combined safety budget well over \$1 billion per year, it is no surprise that the Governmental Affairs Committee (GAO) found that there was overlap and duplication in the federal food safety system.⁴⁹ This bloat makes international commerce challenging, as there are numerous agencies to deal with, each with their own agenda and criteria regarding the inspection of exports. With all of that federal involvement, the American public has an expectation that "the food industry was governed under the strictest of regulations to produce food off the highest safety level possible."⁵⁰ Yet, according to testimony in 1999 from the Commissioner of Food and Drug Administration, U. S. Department of Health and Human Services, the number of food-borne pathogens has increased more than five-fold since 1942.⁵¹ All of the government

oversight and inspection have failed to prevent the millions of cases of food-borne illness and thousands of death each year.

While global food trade is not a concern to the average soldier, the impact is felt in other ways. The emphasis on food safety has led to restrictions on what food sources are available to use when conducting operations outside of the U.S. For LOGCAP, these regulations have an impact on their bottom line, as they strive to balance both cost efficiencies and ensuring food security. However, for the soldier or Marine operating alongside host nation municipal leaders or security forces in support of security operations, the regulations can appear impractical and an impediment to the mission: a refusal to eat local food due to regulations can have a negative impact on the relationships he is trying to establish. In addition, as in the case of some of the soldiers who deployed to the Philippines, Cuba, and other overseas locations during the Spanish-American War, their travels actually allowed for better rations than what was prescribed, since they were able to augment their simple, monotonous rations with an abundance of tropical fruit and seafood available in the local market. Does it make sense to return to past practices and relax health regulations to allow the military to forage or buy food from local sources? In the interest of force protection, and without appropriate training on how to select safe food sources, the easy answer is a quick no. However, it is a subject worth examining the Marine Corps anticipate missions that involve a minimal footprint and maximum interaction with host nation forces, which require relationship building that can be enhanced by “breaking bread” together. Potential solutions may be to provide basic sanitation and food preparation instruction to all Marines, which would benefit them in their personal lives as well as in combat conditions; to assign Food Service Specialists to smaller units to supervise food procurement and preparation; to allow small unit leaders to accept greater risk in situations where eating local food would

contribute to mission accomplishment; and to have greater access to Army Veterinary Corps personnel for inspections.

Class I planning

Planning for the appropriate quantity of supplies required to sustain an operation can be difficult, as many factors must be considered. For example, ammunition requirements will flex depending upon the type, intensity, and duration of enemy contact. However, subsistence planning factors are generally among the most straightforward due to the known quantities of personnel that need to be fed, particularly during the early stages when the primary meals provided are PORs.⁵² This might lead one to ask, how hard could it be? A RAND report pointed out, “it is safe to assume that each person will eat a specified number of meals each day and accordingly “push” out supplies to cover expected consumption on a regular basis, greatly limiting the amount of food that must be held by units. There is no need to wait for a meal to be consumed before starting the next one on its way.”⁵³ Some supplies, such as specific types of ammunition, may require emergency resupply due to a rapid or unexpected escalation of force (as evidenced by the shortage of certain types of grenades during AL FAJR) that exceeds distribution center capacity. However, food requirements are fairly simple to anticipate, as the quantity of personnel that are in theater changes only based upon strategic direction, and thus should be accounted for during the planning for strategic lift of personnel out of CONUS.

As experiences in Iraq in early 2003 demonstrated, there is room for error. During both the deployment and the major combat phases of Operation IRAQI FREEDOM, shortages of MREs were experienced by Army and Marine Corps ground personnel. At the most critical point, some Marine Corps combat service support units had less than one day of supply of MREs available for distribution and consumption.⁵⁴ Part of the blame is due to inaccurate consumption

forecasting and a more rapid deployment of combat forces into theater than the AMC anticipated. However, the problem is larger than that. While downsizing following both the Vietnam War and Desert Storm, the Army repositioned logistics personnel into the Reserves. This translated to a slower response time once they were needed simply due to the fact that they needed to be mobilized prior to starting deployment preparations. To exacerbate that, decisions made by then-Secretary of Defense Donald Rumsfeld led to reservists not being notified of their deployment until after Christmas of 2002. His micromanagement of the deployment schedule prevented the military from deploying the right forces into theater in time to establish infrastructure required to support operational level logistics. These problems are part of a larger system of flawed thinking that has reduced or removed logistics personnel from the active duty component of both the Army and the Marine Corps, and has contributed to the perceived need to use contracted logistics support to fill the resulting shortfalls.

By design, following the initial phases, the meal plan slowly transitioned from an initial reliance exclusively on PORs, to one that included UGRs and when possible, fresh fruits and vegetables. As discovered through decades of experience, packaged or heavily processed food will allow survival, but the introduction of fresh components such as fruit and vegetables has a direct impact not only upon health and performance. As the Marine Corps transitioned to security and stability operations conducted out of static Forward Operating Bases, messhalls were established to provide regular access to hot meals and supplements. Like dominoes, as time passed, each FOB established large dining facilities that were no longer staffed by uniformed personnel, but contracted civilians (typically third country nationals) hired by contractors working under LOGCAP. These changes were in some cases seen as a natural progression, and many camp commanders requested this type of support, but that does not mean

it was the most efficient or tactically sound solution. The popular justification was that it would improve morale and therefore the fighting effectiveness of the Marines. However, as the esteemed S.L.A. Marshall points out, “When an American goes into battle, he should have the best of fighting gear that money can buy- his uniform, his weapons, his equipment for medical protection and his transportation...But beyond this fundamental requirement is where the waste comes in...For it is a rule of nature that soft handling softens men, and the rule applies not only to the combat lines but to the forces supporting it.”⁵⁵ The individual Marine – regardless of occupational specialty - does not need ice cream every day to accomplish his mission, and building that expectation erodes at the very spirit of the Marine Corps as a fighting force designed to deploy quickly and operate under the most austere conditions.

Contracted food service support

In the early 2000s, the Marine Corps decided to reorganize the organization of its food service personnel, placing the majority within the CSS element. This was done partially in response to the outsourcing of many garrison dining facility positions to civilians, as the Army had done over two decades prior, and partially to have better oversight over the training and deployment of mess specialists.⁵⁶ However, what this reinforced was that many units in the Marine Corps – an organization that advertises its ability to be self-sufficient - needed external support for messing. In the case of deployments of the past decade, this translated to a heavy reliance on consolidated, contracted messhalls staffed with civilians, even though the uniformed personnel and mobile kitchen trailers existed and were sent home after being replaced. Contracted support, while seemingly convenient and sometimes cost effective, can bring with it a host of unintended effects. Regarding contractor support during the War of 1812, Major General Winfield Scott commented that “the interests of the contractor are in precise opposition to those of the troops”⁵⁷

because of their focus on providing items that brought them the most profit, vice what was most necessary to mission accomplishment. Over 200 years later, those same accusations were being levied against the contractors providing support to the military in Iraq and Afghanistan. At times, over half of the US presence in those two countries was contractors, and the Commission on Wartime Contracting (COWC) found that “long term costs are seldom considered” and that much of the fraud, waste and abuse stemmed from “treating contractors as a free resource.”⁵⁸ Contractors were able to use inaccurate or incomplete requirements to their advantage. However, when profit margins are more important to your survival as an organization than defeating the enemy, it should not come as a surprise that some companies will be tempted to profit at their customers’ expense.

An example of this was the \$3 billion DLA subsistence contract that was awarded to Supreme Foodservice AG, the Subsistence Prime Vendor in Afghanistan. Contracted to provide food, water, and some non-food items, they also ended up receiving an additional \$124 million for transportation and packaging costs, and \$450 million for using “premium airlift” to deliver fresh fruits and vegetables to isolated bases.⁵⁹ Remarkably, “DLA failed to ask [USTRANSCOM], which has extensive experience contracting for airlifting in Afghanistan, to review the requirement.”⁶⁰ In terms of workers, the COWC noted that local nationals and third country nationals hired for low-skill work such as food service cost far less than an enlisted Marine.⁶¹ However, the cost alone shouldn’t be the only metric for comparison. The contracted civilian workers result in an increased number of occupants at the camp, which translates to food, billeting, and power commitments, since they are usually billeted separately due to force protection concerns. In addition, while an enlisted Marine contributes to the force protection plan or any number of other additional duties, the unarmed civilian workers do not. Finally,

Marines are not limited to specific working hours and conditions, which are typically stipulated in contracts for civilian workers. This means that if the security situation suddenly devolved, the contractors would have every right to refuse to work. Or, if the operational tempo of the Marines required them to eat outside of established hours, the contractors would be awarded overtime. In this case, the cost efficiency does not equate to an effective messing solution.

One final note on challenges associate with providing messing deals with the distribution network itself. Transportation – historically a factor in ensuring the distribution networks were effective – continues to be a major planning consideration. New theaters may have limited entry points, whether due to adjacent nations choosing to limit support (such as Turkey in the 2003 invasion) or lack of air or port facilities capable of accepting/sorting materiel. Additionally, during force deployment, sustainment units compete for passenger lift with combat units, so capacity may take a while to build. "As a result, it makes sense to consolidate loads to the extent possible at permanent, fixed facilities in CONUS or other places where the United States has fairly robust, permanent infrastructure."⁶² This complements the President's guidance to reduce our impact in theater. Minimizing the amount of time and personnel needed to handle the materiel at different points along the distribution path makes sense and streamlines the process, resulting in the right supplies getting to the tactical units in less time. In addition, long supply lines create additional vulnerabilities. "Reliable flows also depend upon adequate supply line security and force protection capabilities, which has resource implications."⁶³ Food procured externally and delivered via contracted transportation requires military escort, which may detract from primary duties, or armed civilian escorts, which may increase the cost. Either way, it creates an additional burden on the distribution network.

CONCLUSIONS

In examining the organizations and processes involved in how the Marine Corps feeds the operating forces in the field, as well as using the history of provisioning to ground forces to determine what led to those procedures, several questions emerged. The answer is not to find a one-size fits all solution with regard to sustainment. Supplying major combat operations that involve a rapid build-up of significant numbers of armed combatants is different than a light force designed to influence the outcome of internal or low intensity conflicts, deliver humanitarian assistance, or provide disaster relief. The options will also vary based on natural resources of host and adjacent nations. However, the economic impact of war is significant, and if buying locally will reduce the domestic cost as well as contribute to stability and post-conflict recovery, it is an option worth exploring. It has the potential to undermine insurgent efforts by supporting the population, and it allows for the lower cost option that the President called for in his Defense Strategic Guidance. At face value it may seem contradict the Commandant's guidance to operate independent of local infrastructure due to using the same food resources and potentially local workers. In reality, because it reduces the sheer quantity of outside personnel, equipment, and resources being brought in to feed the force, it actually reduces the burden on the local population by enabling a smaller footprint and creates a less permanent presence. Therefore, it would make sense, and meet Service and Executive level guidance; to go back to using less external and wartime contracted support. In the fiscally constrained future of the DoD it would it save taxpayer money in the long run, even if in the short run it disrupts some of the symbiotic relationships between the military and industry. The food service support organizations would currently be ill suited to take on all of the contracted functions themselves. However, reorganization of support structures and a return to an expectation of austerity in

wartime (such as subsisting more on packaged rations and less on elaborate dining facilities) could also reduce the amount of contracting required.

¹ John W. Thomason, Jr. *Fix Bayonets!* New York: Charles Scribner's Sons, 1926, x.

² MAGTF: Marine Air-Ground Task Force. The Marine Corps organizes its forces into MAGTFs of varying sizes depending upon the specific mission to which it is assigned. Regardless of size, the MAGTF is comprised of a task-organized mix of air and ground forces designed to provide a rapidly deployable, combined arms capability with worldwide reach under a single commander. Each type of MAGTF will have a command element; a ground combat element built around the infantry and which may include armor, artillery, and reconnaissance capability; an aviation combat element which includes fixed and rotary wing aircraft and associated maintenance and control elements; and a logistics combat element which provides multi-functional support to itself and all other elements of the MAGTF. This includes all six functions of tactical logistics (transportation, maintenance, general engineering, health services, supply, and services, such as messing) as defined by Marine Corps Warfighting Publication (MCWP) 4-11. The types of MAGTFs are described in more detail in Marine Corps Reference Publication (MCRP) 5-12C.

³ It is useful to consider what the term capable, as used by the Commandant, could mean for the Marine Corps. By definition, capable implies that the ability exists, and that there is a level of proficiency associated with that ability. In the context of his guidance, it implies that the Marine Corps must have the ability to conduct expeditionary operations without relying on local resources, to include sustenance, across the full spectrum of conflict. However, capable does not necessarily mean willing, and it is unclear if he intends by this guidance to make self-sustainment in all areas a constraint that will impact a commander's planning. In other words, while we must be able to do so, it is not clear whether it should be a requirement that precludes us from taking advantage of local resources where practical. Therefore, lacking definitive guidance, this paper will assume that local and imported sustenance are options for the commander.

⁴ United States, *Sustaining U.S. Global Leadership: Priorities for 21st Century Defense* (Washington, DC: Department of Defense, January 2012), 3.

⁵ United States, *Joint Publication 4-0 Joint Logistics* (Washington, DC: Joint Chiefs of Staff, 18 July 2008), vii.

⁶ JP 4-0, i

⁷ JP 4-0, foreword

⁸ That is, those forces provided from the Marine component commands. In support of training exercises and deployment, these Marine forces may fall under the combatant command of designated unified commanders for joint operations. The sourcing Marine Corps component normally retains the support responsibility for MAGTFs assigned to joint commands by providing a headquarters to serve as the service component commander, or delegates this responsibility to the MAGTF commander. Either way, the Marine component commands retain most of the responsibility for operational level logistics coordination. Reference: MCWP 4-11, 2-2.

⁹ United States, *Marine Corps Warfighting Publication 4-11* (Washington, DC: United States Marine Corps, 13 June 2000), 1-2.

¹⁰ According to Joint Publication 4-09, Class I is the category of supply encompassing subsistence, and includes the following subclasses: A (nonperishables), C (combat), R (refrigerated), S (nonrefrigerated), and W (water). For this paper, any discussion of Class I supplies or subsistence items refers to food items only and excludes subclass W.

¹¹ JP 4-0, ix.

¹² JP 4-0, ix.

¹³ John C. Fisher and Carol Fisher, *Food in the American Military* (Jefferson, North Carolina: McFarland & Company, Inc. Publishers, 2011), 189.

¹⁴ "Troop Support: Subsistence" Defense Logistics Agency. <http://www.troopsupport.dla.mil/subs/>

¹⁵ "Troop Support: Subsistence: Food Services". Defense Logistics Agency, <http://www.troopsupport.dla.mil/subs/pv.index.asp>

¹⁶ "Troop Support: Subsistence: Background on Executive Agent", Defense Logistics Agency, <http://www.troopsupport.dla.mil/subs/ea.index.asp>

¹⁷ Ibid.

¹⁸ MCWP 4-11, 1-2.

¹⁹ Caleb Eames, "Norway Prepositioning Management Office Fills Critical Mission," Marine Corps Support Facility – Blount Island & Blount Island Command, www.bic.usmc.mil/Norway.aspx

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- ²⁰ Melissa D. Mihocko, USMCR, *US Marines In Iraq, 2003: COMBAT SERVICE SUPPORT DURING OPERATION IRAQI FREEDOM* (Washington DC: History Division, US Marine Corps:2011), 1.
- ²¹ Mihocko, 2.
- ²² MCWP 4-11, 1-7.
- ²³ MCWP 4-11, 2-25.
- ²⁴ MCWP 4-11, 4-2.
- ²⁵ JP 4-0, viii.
- ²⁶ MCWP 4-11, p1-2.
- ²⁷ MCWP 4-11, 4-12.
- ²⁸ MCWP 4-11, 5-1.
- ²⁹ MCWP 4-11, 5-1.
- ³⁰ Fisher, 4.
- ³¹ “Army Contracting Command Brochure”, US Army Contracting Command, <http://www.acc.army.mil/files/acc-complete-brochure.pdf>.
- ³² United States, *Army Regulations 700-137 Logistics Civil Augmentation Program*, (Washington, DC: Department of the Army, 2012), 1.
- ³³ Ibid.
- ³⁴ CSSE, or combat service support element, is used interchangeably with LCE, or logistics combat element, throughout this paper, except in direct quotes. LCE is the more contemporary term for the MAGTF element that provides combat service support to the MAGTF. It came into use following the reorganization of the Force Service Support Group (FSSG) into the Marine Logistics Group (MLG) that was initiated based upon lessons learned during the first OIF deployment.
- ³⁵ United States, *OPNAVINST 3500.38B Universal Naval Task List* (Washington, DC: Department of the Navy, 2007), 4-B-133.
- ³⁶ During the Revolutionary War, soldiers were typically responsible for cooking for themselves. The term “mess” at that time referred to the group of people who ate together. Since a tent typically held six people, each group of six was considered a mess, and one person from within each was designated to do the cooking. The means for cooking varied from cooking hard unleavened bread on stones from the fire, to digging an earthen fire pit and suspending kettles or positioning bars over the flames. Cooking equipment was not typically issued until the Mexican War, when two mess pans were issued to each group of six soldiers, with the expectation that communal cooking was still the standard for preparing hot food (Fisher, 39). The term has survived to this day, and is interchangeable with many others, such as the mess deck on Navy ships, dining facilities aboard military installations, or “chow hall” as it is commonly called in the Marine Corps.
- ³⁷ Fisher, 149.
- ³⁸ Fisher, 133.
- ³⁹ “Combat Feeding,” U.S. Army Natick Research, Development & Engineering Center, <http://nsrdec.natick.army.mil/about/food/index.htm>
- ⁴⁰ MCWP 4-11, 5-37.
- ⁴¹ Food service personnel requirements for different types of rations can be found in table 5-3 of MCWP 4-11.
- ⁴² “Trade, foreign policy, diplomacy and health: Food Security,” World Health Organization, <http://www.who.int/trade/glossary/story028/en/>
- ⁴³ United States, *National Security Strategy* (Washington, DC: President of the United States, 2010), 39.
- ⁴⁴ “Agriculture and Food Security”, US Agency for International Development, <http://www.usaid.gov/what-we-do/agriculture-and-food-security>
- ⁴⁵ Fisher, 125.
- ⁴⁶ Fisher, 120.
- ⁴⁷ Fisher, 120.
- ⁴⁸ US Senate Committee on Government Affairs, *Overlap and Duplication in the Federal Food Safety System" Hearing Report*, (Washington, DC: US Government Printing Office, 2000), 2
- ⁴⁹ Overlap and Duplication hearing report, 1
- ⁵⁰ Overlap and Duplication hearing report, 26
- ⁵¹ Overlap and Duplication hearing report, 52
- ⁵² For example, MCWP 4-11 provides guidance on how to establish stockage objectives, or how many days of supply that should be on hand. The reorder point is based on the sum of requisition processing time, shipping time,

and safety days (with a buffer built in to combat minor delays in resupply or unpredictable changes in demand – although the latter should be minimal for food). MCWP 4-11, 3-6.

⁵³ Eric Peltz, *Sustainment of Army forces in Operation Iraqi Freedom : major findings and recommendations* (Santa Monica, CA : RAND, 2005) , 9.

⁵⁴ US Senate Committee on Armed Services, *Defense Logistics: Actions Needed to Improve the Availability of Critical Items During Current and Future Operations* (Washington, DC: Government Accountability Office, April 2005), 21.

⁵⁵ S.L.A. Marshall, *The Soldiers Load and the Mobility of a Nation* (Quantico, VA: Marine Corps Association, 1980), 92-93.

⁵⁶ CWO4 Carlos N. Keith, “Field Feeding in the 21st Century”, *Army Logistician*, September-October 2001.

⁵⁷ Fisher, 23.

⁵⁸ United States, Commission on Wartime Contracting in Iraq and Afghanistan, *Transforming wartime contracting : controlling costs, reducing risks : final report to Congress : findings and recommendations for legislative and policy changes*, (Washington, DC: U.S. G.P.O., 2011) , Foreword.

⁵⁹ COWC final report, 88.

⁶⁰ Ibid.

⁶¹ The average contractor billing rate for LN food service workers was \$35,700; for TCNs \$67,000; and for an E-3 at least \$86,671. COWC, 231.

⁶² Peltz, 11.

⁶³ Peltz, 10.

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