

MAY-JUNE 2016

ARMY SUSTAINMENT

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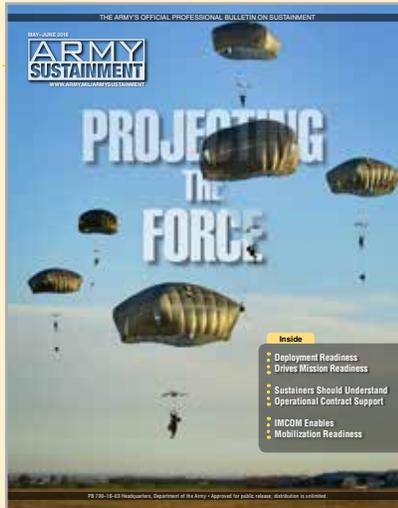
PROJECTING THE FORCE



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Paratroopers from the 173rd Airborne Brigade land in Pordenone, Italy, on Feb. 4, 2016. The 173rd Airborne Brigade is the Army's contingency response force in Europe and can project ready forces anywhere in the U.S. European, Central, or Africa Commands within 18 hours. (Photo by Antonio Bedin)

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Deployment Readiness Drives Mission Readiness For Global Requirements

■ By Lt. Gen. Gustave “Gus” Perna



I believe the outcome of reception, staging, onward movement, and integration operations is determined by home-station readiness. Simply said, if you mess up at the beginning, it will be downhill from there.

Recently, I promoted a new colonel who had two very talented teenagers. Neither of these children had ever been educated in U.S. schools until his recent move to Washington D.C. Here's why: 14 years ago the Soldier was in South America supporting counter-drug trafficking efforts; 10 years ago he was in Germany and then deployed to Iraq during the surge; seven years ago he was in the Netherlands coordinating fuel supplies for 40 countries and then was deployed to Afghanistan twice; and four years ago he was in Korea overseeing a joint logistics support command during heightened tension on the peninsula.

This family's experience drove home to me just how dynamic our Army has been and will continue to be. We have 186,000 Soldiers in 140 countries, and despite the hope for a time-out after 14 years of war, it is not happening. The global demands for our Army remain high, which is why readiness is and will remain the Army's number one priority.

Readiness is how we win wars, deter our most dangerous threats, and prepare for a variety of future missions that can happen at any time and be dispersed over great distances. Success in those future missions will not happen by accident. It will happen with a lot of hard work that is now happening throughout the Army to rebuild our readiness.

Force Projection

This issue of *Army Sustainment* magazine focuses on a key element readiness: projecting the force. Army doctrine defines force projection as “the ability to project the military instrument of national power from the U.S. or another theater, in response to requirements for military operations.” Put simply, we should

be prepared to deploy tonight with the equipment we have on hand.

For any serious discussion of force projection, it is helpful to consider four kinds of activities: predeployment, fort-to-port, port-to-port, and port-to-foxhole. Each requires logisticians to not only know their own organizations but also to understand the great capabilities they have available to get their Soldiers and equipment to their mission locations.

Predeployment Activities

Predeployment readiness starts with home-station fundamentals. Have you developed movement plans, standard operating procedures, and a valid unit deployment listing using the Transportation Coordinators' Automated Information for Movements System II? Have you rehearsed load plans and executed roll-out activities as part of your unit's command deployment discipline program?

As the Army transitions to standardized mission-essential task lists, “conduct expeditionary deployment operations” will likely be added back to each operational brigade's and battalion's tasks. What will that mean to leaders? Commanders have to develop a realistic training strategy to maintain unit proficiency for all tasks designated as mission essential.

For so long, the process has been pretty automatic. You knew a year before leaving that you would deploy, and lots of equipment was already there. But that will not be the case next time. Units have to train and exercise the skills necessary to deploy on short notice so that those skills become second nature.

The best outcomes are generated when logisticians at their home stations develop enduring partnerships with installation support activities, whether provided by sister organi-



DEPLOYMENT READINESS



PREDEPLOYMENT
ACTIVITIES



FORT-to-PORT



PORT-to-PORT



PORT-to-FOXHOLE

zations, support headquarters, or logistics readiness centers. Many capabilities reside outside of deploying units, and leaders and logisticians need to know how to use them.

Fort-to-Port Operations

The fort-to-port segment of force projection begins when the unit hands off its equipment to an outside organization. This is the last time a unit can touch its equipment before it arrives in theater.

Fort-to-port movements frequently involve a range of supporting organizations to include loading teams, maintenance teams, arrival/departure airfield control groups, deployment support teams, and port support teams. These teams may consist of contractors, Department of the Army civilians, and other Army units.

Success relies on a unit's ability to properly manifest personnel and equipment, develop and certify load plans, create military shipping labels, complete shippers' declaration of hazardous cargo paperwork, and prepare or reduce cargo (like oversized vehicles or rotary-wing aircraft) for shipment.

Port-to-Port Operations

Port-to-port operations are carried out by sea, surface, or air and executed through a combination of Department of Defense and con-

tract support assets. How equipment moves from port to port should be a key element of a commander's planning process.

The type of strategic lift assets available may not be compatible with transported equipment and the movements' delivery time line, which potentially affects the operational maneuver plan. The ability to monitor and track in-transit visibility is an invaluable tool commanders should use to match equipment arrival dates to mission requirements.

Port-to-Foxhole Operations

Port-to-foxhole operations contain some of the most challenging aspects of force projection. The last tactical mile of getting the right stuff to the right place has always been the hardest to synchronize.

This is especially true in an anti-access/area-denial environment where regional intermediate staging bases, like the ones we have grown used to in Kuwait, are not employed.

None of these four phases stands alone. I believe the outcome of reception, staging, onward movement, and integration operations is determined by home-station readiness. Simply said, if you mess up at the beginning, it will be downhill from there.

Investments in a thorough command deployment discipline pro-

gram, well thought-out load plans, and analyzing how equipment is echeloned into an area of operations is what produces success.

The very same week that I promoted the new colonel, I retired a 34-year veteran, a good friend I first served with in 1993 at Fort Hood, Texas, and then went to war with in Iraq supporting the 4th Infantry Division. He had an accomplished career, from serving as a maintenance officer in Somalia to spending years helping to develop the Army's future vehicles.

He said that of all the missions he supported, some of the most important were rotations to the National Training Center; they had left lasting impressions on the importance of readiness, training, maintenance, and supply that carried him through his career.

I am confident that training every day, whether at home station or a combat training center, and understanding the intricacies of force projection will pay the same dividends to our new generation of Soldiers who are ready to defend our Nation.

Lt. Gen. Gustave "Gus" Perna is the Army deputy chief of staff, G-4. He oversees policies and procedures used by 270,000 Army logisticians throughout the world.



Sustainers Should Understand Operational Contract Support

The Combined Arms Support Command plays an important role in integrating OCS into sustainment concepts, capabilities, and doctrine.

■ By Maj. Gen. Darrell K. Williams and Lt. Col. (Ret.) William C. Latham Jr.



Fellow sustainers, if you do not understand operational contract support (OCS), you need to learn about it. We like to say, “You can’t spell sustainment without OCS.” It really is that important to current and future operations.

OCS is the process of planning for and obtaining supplies, services, and construction from commercial sources in support of joint operations, and it plays a critical role in the Army’s ability to deploy, fight, and win the nation’s wars. As the Army’s force modernization proponent for OCS, the Combined Arms Support Command (CASCOM) will play an expanded role in integrating OCS into current and future sustainment concepts, capabilities, and doctrine.

We Rely on Contractors

Joint Publication 4-10, Operational Contract Support, makes the point that the United States “has always used contracted support in military operations at various levels of scope and scale.” We have contracted for everything from shoes and rifles to medical support, maintenance and repairs, security, intelligence, engineering support, and much more.

According to the Center for Military History, the ratio of contractors to Soldiers was 1-to-5 during the Civil War. During Operations Desert Shield and Desert Storm, that ratio dropped to 1-to-60.

Since then, our reliance on commercial support has dramatically increased in terms of both scope and complexity. A recent Department of

Defense report to Congress indicates that 41,922 contractors support military operations in the U.S. Central Command area of responsibility, and the ratio of contractors to Soldiers was 1-to-1 in both Afghanistan and Iraq.

OCS also factors prominently in our response to humanitarian assistance operations, particularly in the Pacific, and in our support to major training exercises and missions throughout Latin America, Europe, and Africa. The Army now uses more contractors in support of contingency operations than ever before, and the potential exists for their use to increase.

The U.S. Army Operating Concept, *Win in a Complex World*, describes a challenging and constantly changing future environment. Smaller, more lethal and dispersed formations capable of global deployment on moment’s notice will tax our ability to sustain operations.

This phenomenon, combined with the imperative to ensure preparedness to support combatant command contingency operations, will continue to stretch our military forces and thus drive greater reliance on OCS to fill critical capability gaps.

CASCOM’s Role in OCS

To prepare for this threat, the Training and Doctrine Command has identified 20 Army warfighting challenges (AWFCs). The Army Capabilities Integration Center is addressing each of these challenges within the centers of excellence. As the Sustainment Center of Ex-

Our preparation for real-world exercises and deployments must include the development of cross-functional OCS cells with the expertise needed to anticipate, plan, integrate, and manage OCS as part of our daily battle rhythm.

cellence, CASCOM is integrating and synchronizing efforts across all of its domains to address capability gaps identified in AWFC #16, Set the Theater, Sustain Operations, and Maintain Freedom of Movement.

Sustainment functions exist within each of the other 19 challenges, most notably AWFC #12, Conduct Joint Expeditionary Maneuver and Entry Operations. OCS will play a major role in bridging materiel and nonmateriel gaps within these AWFCs.

Further, the draft of the latest Army Functional Concept for Sustainment describes our approach to supporting the environment envisioned by the Army Operating Concept. The draft concept looks well beyond the near horizon and past 2025—an environment that is inherently uncertain. It recognizes the continuing requirement for future Army forces to conduct OCS activities to sustain joint combined arms operations.

The Army recently assigned CASCOM as the force modernization proponent for OCS. Specifically, it made CASCOM responsible for OCS functions other than acquisition (such as contract support integration and contractor management) and for coordinating the OCS acquisition function with the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. The OCS policy role remains, appropriately, with the Office of the Deputy Chief of Staff, G-4.

To clarify governance and enterprise roles and responsibilities, CASCOM hosted an OCS senior leader forum with key stakeholders on Feb. 4, 2016. Participants included representatives from the Office of the Deputy Chief of Staff, G-4, the Army Materiel Command, the Army Sustainment Command, the Army Contracting Command, and the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. Follow-on sessions will continue to build on this momentum and ensure even more effective policy, doctrine, and support to Army and joint forces during contingency operations.

Some Hard Truths

As the Army seeks to streamline its approach to OCS, it must recognize a few hard truths. First, OCS will remain a critical warfighting enabler. OCS plays a decisive role in the way we train, deploy, and fight, and we must assist commanders in fully in-

OCS plays a decisive role in the way we train, deploy, and fight, and we must assist commanders in fully integrating this capability into routine staff functions.

tegrating this capability into routine staff functions.

Our preparation for real-world exercises and deployments must include the development of cross-functional OCS cells with the expertise needed to anticipate, plan, integrate, and manage OCS as part of our daily battle rhythm.

Second, we must embrace the fact that OCS is not merely a sustainment or logistics function. The Army employs contractors for many non-logistics tasks, from intelligence analysis to allied military training.

Moreover, the coordination required to effectively integrate OCS within military operations reaches across multiple functions and staff responsibilities, including personnel accountability, intelligence, force protection, facilities management, communications, financial management, and sustainment.

Many of us learn about these processes through on-the-job training. Fortunately, there is an easier way. Joint and Army doctrine for OCS is readily available in Joint Publication 4-10 and Army Tactics, Techniques, and Procedures 4-10, Operational Contract Support Tactics, Techniques, and Procedures. In addition, both Joint Knowledge Online and the Defense Acquisition University provide online training for various OCS tasks and functions.

Finally, officers, noncommissioned

officers, and civilians are eligible to attend the one-week Contracting Officer's Representative Course and two-week OCS Course at the Army Logistics University. Planners at operational and strategic headquarters may attend the Joint OCS Planning and Execution Course sponsored by

the Joint Staff J-4.

Over the past 15 years of combat operations, the Army has made significant progress in its ability to plan for and manage commercial support. These changes have improved the way we support unified land operations. As we respond to the challenges of an uncertain future, we need to sustain that momentum.

At CASCOM, we are pursuing a series of initiatives to enhance a commander's ability to leverage OCS and will provide further details on these initiatives in the months to come. In the meantime, every Army leader should learn what OCS is, how it works, and what it can and cannot do. If you do not understand OCS, it is time to get smart.

Maj. Gen. Darrell K. Williams is the commanding general of the Combined Arms Support Command and Sustainment Center of Excellence at Fort Lee, Virginia.

Lt. Col. (Ret.) William C. Latham Jr. is the director of the Army Logistics University's Operational Contract Support Course at Fort Lee, Virginia. He is the author of *Cold Days in Hell: American POWs in Korea* and has written about military affairs for a variety of publications, including *Army Magazine*, *Army History*, and *Military Review*.

Three Fundamental Ideas That Are the Essence of Military Logistics

■ By Christopher R. Paparone, Ph.D., and George L. Topic Jr.

Periodically we sit and think deeply about the nature of military logistics and how things should and do fit together. Three of our ideas, none revolutionary, about stored energy, fulfillment, and geologistics offer a framework that logisticians can use to guide critical decisions about tactics, capabilities development, policies, and strategies. Our hope is that readers will use our ideas to start conversations with others and reflect on their own thoughts and actions.

Stored Energy

Logistics is the “potential energy” for war, campaigns, and combat. Military logistics is a central component of national power and potential national power, which are distinct from military force. Defense logistics can exist without a national military strategy, campaign designs, or tactical maneuver; however, you cannot effectively execute these functions without drawing power from an extant logistics system.

Support of any kind of operation depends on the stored energy of the logistics system. If a viable logistics structure is not in place before strategy and policy are conceived, they will quickly fail. We believe it is a myth that policy and strategy drive the makeup of the logistics system. Setting the conditions for policy and strategy in national defense depends on the potential energy of logistics.

Fulfillment

Logistics fulfillment is essentially the reconciliation of requirements and the application of capacity, ability, and materiel. This truth exists at all levels of war and across the range

of military operations. In fact, much risk can be defined as the reconciliation between what the force needs and what it actually receives.

While newly fielded enterprise resource planning systems are capable of tracking millions of requisitions and materiel costs, they are not very helpful for envisioning organizations’ human relationships and technical processes that supply, maintain, and provide health care, sustainment engineering, and transportation to supported forces.

Requirements and capabilities still depend largely on an array of unconnected information systems, trust building, and information sharing among participants who enter and depart the adaptive, decentralized, self-organizing enterprise.

Geologistics

Designating a theater as “mature” versus “expeditionary” is largely based on the status of its lines of communication (LOCs) and lines of operations (LOOs). Is logistics flowing routinely in planes, trucks, trains, and boats, or are those engaged in the operation carrying with them only enough supplies for a temporary base?

Historical examples of both are plentiful and include the base-hopping campaigns in the Pacific during World War II and the 60-plus years that the Army has maintained bases in South Korea and Europe.

More recently, the system of forward operating bases in Iraq and Afghanistan, fed by sea LOCs and land routes from Kuwait through Pakistan and the Northern Distribution Network, make geographically remote operations possible.

The politics, weather, ports, roads, railroads, and rivers that comprise the LOCs contribute to uncertainty. Logistics risk is as complex as the LOC-LOO variations that effect fulfillment. Because risks are not easily measurable, they are mostly left to the logistician’s intuition.

There is little that is revolutionary about these ideas, but we hope they are thought provoking. The magic comes from thinking about them together.

The nation’s senior logisticians are already moving in this direction by developing policies and concepts that are specifically aimed at assessing logistics readiness (potential energy). They are also finding ways to envision fulfillment holistically and to recognize geologistics patterns associated with the LOC and LOO interaction.

Reflecting on the ways we think about and execute these fundamentals may lead to the research and development of future logistics capabilities, such as those driven by the Capstone Concept for Joint Operations and the Army Operating Concept.

If these three ideas represent the essence of military logistics, which is what we contend, then significantly changing how we portray and accomplish them may change the game of policy and strategy.

Christopher R. Paparone, Ph.D., is a dean at the Army Logistics University at Fort Lee, Virginia.

George L. Topic Jr. is the vice director of the Center for Joint and Strategic Logistics at Fort McNair, Washington, D.C.

Reminder: The 2016 General William E. DePuy Special Topics Writing Competition

This year's theme is Educating the Force: What is the right balance between training and education?

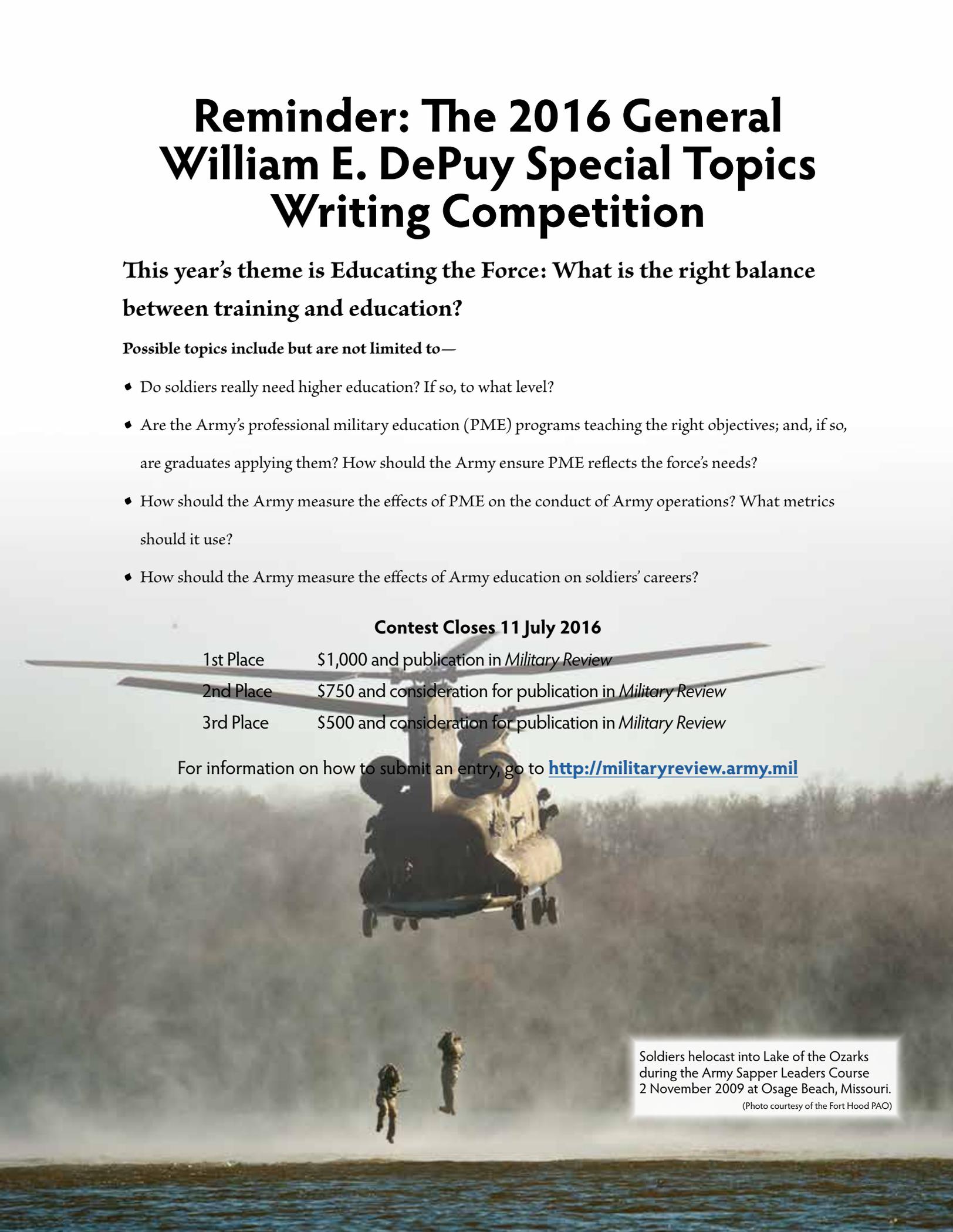
Possible topics include but are not limited to—

- ◆ Do soldiers really need higher education? If so, to what level?
- ◆ Are the Army's professional military education (PME) programs teaching the right objectives; and, if so, are graduates applying them? How should the Army ensure PME reflects the force's needs?
- ◆ How should the Army measure the effects of PME on the conduct of Army operations? What metrics should it use?
- ◆ How should the Army measure the effects of Army education on soldiers' careers?

Contest Closes 11 July 2016

1st Place	\$1,000 and publication in <i>Military Review</i>
2nd Place	\$750 and consideration for publication in <i>Military Review</i>
3rd Place	\$500 and consideration for publication in <i>Military Review</i>

For information on how to submit an entry, go to <http://militaryreview.army.mil>

A military helicopter is shown in flight, hovering over a body of water. Two soldiers are being hoisted by a hoist, one is already in the air and the other is just starting to be lifted. The background is a misty or foggy landscape with trees.

Soldiers helocast into Lake of the Ozarks during the Army Sapper Leaders Course 2 November 2009 at Osage Beach, Missouri.

(Photo courtesy of the Fort Hood PAO)



Soldiers with the 3rd Infantry Division load the .50-caliber machine gun of an Abrams tank during a combined arms live-fire exercise at the Joint Multinational Training Center in Grafenwoehr, Germany, on Nov. 19, 2015. The exercise was the culminating event for Combined Resolve V. (Photo by Markus Rauchenberger)

Shaping the Force: Do Regionally Aligned Forces Fit the Bill?

The Army should make the overarching principles of the regionally aligned forces concept more enduring in order to deter conflicts and stabilize regions.

■ By Lt. Col. (Ret.) Jack T. Judy

Modernization is a crucial element in any successful venture. When it comes to fighting wars, it is essential. The challenge is to determine how to best shape the force with the resources available.

In his 2010 National Security Strategy, President Barack Obama pronounced that the United States “will continue to underwrite global security,” and “deter aggression and prevent the proliferation of the world’s most dangerous weapons.”

The military services have conquered this task through the past decade, but shrinking resources add a layer of complexity. Budgetary constraints and force reductions require the services to derive new strategies.

A Plan for the Future

After more than a decade of war and changes in the world’s threats, the Army developed a new strategy to meet the future. According to the 2013 Army Strategic Planning Guidance, the Army is moving from

“a force focused on counterinsurgency operations to one that is operationally adaptable and able to meet the full range of combatant commander requirements.”

The Army’s solution for the future is to regionally align its forces to combatant commanders. The intent is to leverage regional expertise and experience to make up for reduced funding.

Under the regionally aligned forces (RAF) construct, units will operate within the same region for an ex-

tensive duration, which will provide them with opportunities to partner with other nations, understand the language and culture, and forge relationships to help strengthen and stabilize the region.

Essentially the alignments will allow combatant commanders to conduct stability operations as a proactive measure to preclude unconventional warfare. Regional alignment is a proactive, rather than reactive, approach to deterrence. It enables the Army to engage with the smallest force necessary to preclude hostilities.

How RAF Was Born

The Army Force Management Model is a cyclic approach to modernization and relevancy for the future. Change begins with determining strategic and operational requirements published in documents such as the National Security Strategy and National Defense Strategy; those requirements are eventually distilled into The Army Plan.

The president publishes the National Security Strategy to focus the efforts of all federal entities and provide a common direction. Each agency analyzes the strategy to determine how it will support national policy and subsequently provides its own strategic guidance and direction. The Army publishes The Army Plan to translate the requirements from the higher level strategy into implementation guidance and priorities.

From there, the Army balances existing capabilities with strategic requirements to determine what the force can accomplish and what shortfalls it expects. The challenge is how to meet the shortfalls. Force managers look at several options, including changing organizations' structures, fielding new equipment, and training the force.

Constraints like strength ceilings and budgetary restrictions all affect the outcome. While the Army is currently shrinking in manpower because of the drawdown and the declining military budget, increasing troop strengths in the geographic

combatant command regions is not a viable option, so the optimal solution is to regionally align forces on a rotational basis and keep them garrisoned stateside.

The Need for Stability

The Army has learned a valuable lesson in the past 13 years of conflict: it must establish a stable environment after hostilities cease. The strategy of RAF will provide opportunities to establish a long-term presence and forge relationships regionally throughout the world; however, the Army must emphasize the importance of stability skills.

Achieving stability is the most important and most difficult task. Units should train both to a baseline level of competence for decisive action and to accomplish tasks required by the combatant commander. The dilemma commanders will face is what to train with the limited resources available.

Determining the optimum mix of warfighting competencies to field a well-rounded force that can achieve the desired outcome is the focus. The Army should maintain a strong emphasis on training and hold it as a top priority.

By establishing a credible presence in a region, the Army can help prevent destabilizing activities and reduce the potential for conflict. Working with other nations, building partnerships, and understanding an area's culture will help the Army remain stable and help the partner nation establish a positive influence within the region.

A Solution at All Levels

The RAF construct provides a resource-conscious solution to preventing conflict by demonstrating U.S. resolve along the strategic, operational, and tactical continuums.

At the strategic level, it provides combatant commanders with a tailorable force to focus on a specific region. Geographic combatant command requirements fluctuate depending on the area of responsibility, current level of turmoil in the region,

and competing demands worldwide.

Some commands have a relatively long-standing permanent structure, such as the U.S. European Command and the U.S. Pacific Command. Other commands, such as the U.S. Africa Command, do not have any large long-standing or permanent force.

Base realignment and closures throughout the world have placed more troops on U.S. soil from overseas theaters. The return of stateside basing, the drawdown, and a declining defense budget limit the options available to fill resource demands.

RAF is a solution that provides the now stateside units with unique training opportunities and the ability to specialize in a region, demonstrate resolve in that region, and provide commanders with extra forces at limited cost.

At the operational level, the construct enhances integration and interoperability between services, other agencies, and host nations. Some military schools provide opportunities for interagency and interservice personnel to collaborate, but operational training collaboration is rare across the force.

Alignment will increase the opportunities to integrate with other agencies and services. This will provide opportunities to learn and understand how each agency operates, increasing competencies throughout the organizations.

Working with host nations will allow commanders to establish lasting partnerships, share best practices, and split the burden for security with the host nation. The National Guard has demonstrated success in this area for the past several decades through the State Partnership Program. The program has a low cost and a small footprint and has built relationships in more than 71 nations.

Tactically, regional alignment increases the force's understanding of an area's culture, improves relationships, and provides a better situational understanding. Combined efforts can help avert conflict, and if the strategy does not prevent conflict,

it at least provides knowledge and a network of relationships to build on if tensions escalate.

Commanders must educate their Soldiers on the culture, region, and language of the specific area to avoid potential faux pas and help foster relationships on a personal level.

The Army has provided combatant commanders with additional resources to support the unique requirements of the region, combine regional opportunities to establish long-lasting relationships, and train units, all in a cost-effective way that supports the national strategy and prevents conflict.

Unconventional Warfare

The RAF concept will provide opportunities to establish a long-term presence and forge relationships regionally throughout the world. However, the Army must emphasize the importance of unconventional warfare skills.

Through the years, the Army has used a wide variety of military strategies, from nuclear arsenals in the early 1970s to large armor formations aimed at preventing a Soviet invasion of Europe. But unconventional warfare has never been a pre-dominant focus.

Prior to 9/11, the Army's primary training focus was on offensive and defensive operations. Training centers did not have the facilities or cadre to support unconventional warfare training for the conventional force, and commanders, most likely, did not want to practice it.

But throughout history, an undercurrent that has always been below the surface of war is unconventional warfare. From the jungles of Vietnam to the deserts of Iraq, terrain often dictated the operational approach, yet the one constant was unconventional warfare.

War is an event in which two opponents are pitted against each other and victory is gauged in captured terrain or the attrition of the enemy force. It is an endeavor in which generals out-manuever other gener-

als with formations of soldiers and equipment. The last force on the field of battle is the victor.

Unfortunately history does not support this definition. The past century has seen several major conflicts that remain in the forefront history, including World War I, World War II, the Korean War, the Vietnam War, and Operations Desert Storm, Enduring Freedom, and Iraqi Freedom. However, 71 insurgencies have begun and ended since World War II. Insurgencies are more common than high-intensity conflicts.

Many historical examples demonstrate that insurgencies are a primary and often effective strategy employed by many adversaries. Success does not always hinge on winning large battles but on the will of the people.

During the Revolutionary War, victory was partially attributed to Paul Revere's ride and the Boston Tea Party. Minutemen uncivilly sniped British formations from behind rocks, walls, and trees instead of using the traditional Napoleonic line formations.

The Civil War saw the emergence of skirmish lines. The terrain in Vietnam made it easy for small elements to melt into the countryside. Outmatched by the superior technology, firepower, and resources of the United States, North Vietnam's General Vo Nguyen Giap's independent fighting method (using a small number of troops to defeat a larger force) proved to be quite effective during the Tet Offensive.

Unconventional warfare is the primary strategy in the Middle East. The ground war in Operation Iraqi Freedom lasted approximately three months, from March to May of 2003, yet 13 years later, the United States is still embroiled in conflicts in the region and facing an emerging threat, the Islamic State of Iraq and the Levant.

Of the 4,491 U.S. combat fatalities in Operation Iraqi Freedom, only 176, or about 4 percent, resulted from the ground war; the remaining fatalities occurred while fighting

the insurgency.

Equipment Modernization

The Army Equipment Modernization Strategy recognizes that there is "no clear and unequivocal primary threat" to the United States. Training scenarios at the National Training Center at Fort Irwin, California, are currently focused on insurgent tactics, but will it endure?

Recognizing the need to address small-scale, unconventional warfare has endured, but modernization strategies still focus on conventional equipment. Years ago, part of the Army's training focus was known as operations other than war, which essentially focused on low-intensity conflicts, to include insurgency.

In 1970, then Secretary of Defense Melvin Laird's Strategy for Peace was one of deterrence. Part of that strategy was the effort to make security the responsibility of the host country. The United States would primarily assist but also deploy to provide a presence and a quick response if needed.

U.S. strategy has recognized unconventional threats for decades, yet most of the budgetary expenditures support conventional systems. Granted, the strength of the U.S. military is unmatched worldwide and absolutely needs modernization to remain that way, so those expenditures must be funded.

In the 1980s, most modernization funding went to major combat systems like the Abrams tank, Bradley fighting vehicle, and multiple launch rocket system. Although some elements within the current modernization plan support the force in a wide variety of environments, most of the effort appears to remain focused on those major combat systems.

Some of the plan does address unconventional warfare. Weapons such as the XM25 individual semi-automatic airburst system allow Soldiers to engage targets hiding behind walls and in buildings and are ideal for unconventional warfare. However, the Army needs to have



Soldiers assigned to the East African Response Force, Combined Joint Task Force–Horn of Africa (CJTF–HOA), fire M4 carbines during a live-fire exercise in Djibouti on March 2. The CJTF–HOA provides security force assistance, force protection, and military support to regional counter-violent extremist organization operations. (Photo by Tech. Sgt. Barry Loo)

substantial long-term investments in resources for combating unconventional tactics.

The Next Step

The RAF concept is a step in the right direction, but the strategy needs to extend well into the future and include resourcing and training for the entire force. The Army must make an enduring, concerted effort to develop and field capabilities to combat the threats identified in the national strategy.

One may dismiss the concept as a special operations focus. But special operations forces are finite, and history shows that the requirement can quickly outgrow the capability.

The strategy must have a champion. In the modernization plan there are many different champions, each with its own capability-based portfolio. Each portfolio has its select systems, which staff develop and modernize according to the strategic guidance. The portfolios support the Army's warfighting functions to pro-

vide focus.

Each of the areas work to field the best equipment, systems, and technology to support the field. While unconventional warfare is a consideration in all areas, it is not the primary focus of any.

When resources get tight and cuts need to be made, the secondary and tertiary systems tend to be the bill payers. So the solutions that are in the forefront today quickly fall by the wayside and are forgotten.

Unconventional warfare has been around for many years, and considering it does not take a lot of funding or high-tech weaponry to conduct, it will be around for years to come. Therefore, the Army should address and prepare for the conflict. It should establish a warfighting function, or at least a portfolio manager, that can focus on the future of this type of warfare.

The RAF strategy is a solid solution to approach the future operational environment. It is a cost-effective

solution and provides combatant commanders a resource to help stabilize a region.

But the Army needs to take the overarching principles of the concept and make them more permanent throughout the force. One common tactic the United States always tends to encounter is unconventional warfare, and it is costly in terms of lives. Therefore, the Army should have a champion to focus on continuous unconventional warfare modernization for the future.

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Supporting Army and Joint Special Operations Forces

■ By Col. Randal Nelson and Mike Gallagher

Opportunities to serve in support of special operations forces (SOF) have markedly increased since 9/11. Officers, warrant officers, and noncommissioned officers are needed to support the dynamic role of SOF across today's complex global landscape.

Assignments to SOF units challenge logisticians, exposing them to additional authorities, policies, funding streams, and nonstandard ways of sustaining complex, geographically dispersed, unconventional operations.

SOF Logisticians: A Global Network

Headquartered at Fort Bragg, North Carolina, the Army Special Operations Command (USASOC) provides SOF career opportunities in more than 25 global locations. SOF joint logistics positions are available at nine locations through the U.S. Special Operations Command (SOCOM) headquartered at MacDill Air Force Base, Florida.

The SOF community has five truths:

- Humans are more important than hardware.
- Quality is more important than quantity.
- SOF cannot be mass produced.
- Competent SOF cannot be created after emergencies occur.
- Most special operations require non-SOF support.

The fifth SOF truth is where logisticians and broader sustainment professionals are called to contribute. Those assigned to SOF units are the resident logistics experts for SOF

commanders. They balance the dynamic management of major force program (MFP) 11 (SOF) systems with the maximum use of MFP 2 (general purpose forces) systems.

Managing MFP 11 funding for special operations systems requires mature personnel to distinguish and manage multiple funding streams. Leaders at all levels rely on SOF logistics professionals to provide the critical link to external resources across the Army and the joint logistics enterprise.

SOF Logistics Assignments

Assignments in SOF units are very demanding and involve supporting uniquely experienced professionals who require no-fail logistics to ensure mission success. It is rewarding to be a member of a team comprising elite professionals who perform special warfare and surgical strike missions without fanfare.

For some professional logisticians, consecutive tours in SOF are desirable. They enable the individual to gain experience in unique skill sets to better support the SOF enterprise.

However, much like personnel management before 9/11, when it was common to seek experience in both light and heavy Army formations to round out an individual's experience, it is now also desirable to achieve a balance of conventional force (CF) and SOF experience to expand professional growth and leader development.

SOF assignments provide opportunities to expand one's understanding of joint operations and exposure to the joint logistics enterprise. Most SOF missions are joint in nature and are normally part of a joint

special operations task force working directly with multiple services across the geographic combatant commands.

After 14 years of sustained conflict on a noncontiguous battlefield, SOF and CF have developed an unprecedented relationship. SOF-CF interdependence and interoperability are extremely important to senior leaders at the highest levels of the Army and joint headquarters.

This has been reflected in the annual Army-SOCOM warfighter talks and Army-SOCOM memorandum of agreement. Building SOF-CF momentum is among the USASOC commander's top six lines of effort.

USASOC seeks to advance SOF-CF interdependence in both training and operational environments to maximize collective SOF-CF readiness and deployed effects. Logisticians serving in both SOF and CF units should understand that this momentum of interdependence is increasing through training and operations worldwide.

Assignment Process

Certain SOF positions are filled by Human Resources Command (HRC) direct assignment. The screening criteria include a strong performance file, an Armed Services Vocational Aptitude Battery general technical score of 100 for enlisted Soldiers, airborne qualification (or a signed volunteer statement for airborne training), and the ability to obtain and maintain a secret security clearance. (Some positions require a top secret security clearance.)

Many select assignments come with stringent vetting, selection,

and training requirements. Certain advanced positions require prior SOF experience. Individuals serving in SOF are screened annually for continued service and selection for broadening assignments within SOF organizations.

Managing SOF-CF Progression

USASOC, in coordination with HRC, developed the skill identifier K9 (special operations support) and the special qualifications identifier S (special operations support personnel). These identifiers are for individuals who have successfully served 22 months in a SOF formation or 12 months in a SOF deployment.

The identifiers must be approved by the first SOF colonel in the chain of command. They enable HRC, unit personnel managers, and senior logisticians across the SOF-CF enterprise to identify talent for upcoming assignment consideration.

Logisticians must serve in a range of positions at all echelons and areas within the Army. This ensures the Army is capable of employing all available resources. It is entirely possible to move between conventional and unconventional assignments to satisfy key developmental, professional military education, and broadening requirements.

Individual counseling is essential for logisticians considering consecutive SOF assignments. The individual, the supported command, and HRC should agree that the assignment is beneficial for career development.

Timing is critical to managing the deliberate flow of logistics professionals in and out of SOF assignments. Early communication and staying ahead of HRC assignment cycle deadlines are imperative for success.

Late recommendations for individuals who are already slated for assignment elsewhere will be problematic for the command, the Soldier, and the family. Communicating early and often facilitates

successful career management.

Individuals interested in serving in SOF assignments should discuss future opportunities with their assignment officer, rater, or mentor during counseling sessions. These assignments can be included as goals in five-year career plan. Opportunities to serve in SOF may be available at your current duty station.

Interested individuals may also contact the SOF logistics mentors at the USASOC G-4, the 528th Sustainment Brigade (Special Operations) (Airborne), and the SOCOM J-4. Branch managers will assist individuals by placing them in SOF assignments.

Further information about USASOC may also be found at the USASOC Facebook page and the USASOC website at www.soc.mil. Individuals may also contact the USASOC deputy G-4 at (910) 432-1180 or richard.w.mcardle.civ@mail.mil.

The demand for SOF is increasing, and opportunities for Army logisticians are many. SOF units continue to seek forward-thinking logistics and broader sustainment professionals who are ready to enable SOF operators on tomorrow's complex battlefield.

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“We seek to advance SOF-CF interdependence, to include interoperability and integration, in both training and operational environments to maximize our collective readiness efforts and deployed effects.”

—Lt. Gen. Kenneth E. Tovo,
Commander,
Army Special Operations
Command

“Logisticians must serve in a range of positions at all echelons both in the conventional and nonconventional Army in order to ensure we are capable of employing all the resources available to our warfighters in this complex environment. Logistics officers must become masters of their craft at the tactical level; this requires our officers to spend time in multiple types of organizations in order to develop the knowledge, skills and attributes they need to sustain our Army.”

—Col. Vic Harmon,
Human Resources Command
Logistics Branch



Soldiers from the 39th Transportation Battalion, 16th Sustainment Brigade, prepare to move European equipment set vehicles issued to 3rd Infantry Division Soldiers on Oct. 14, 2015, in Germany. Changes in how the Army equips the operational force have led to an assessment of the operational readiness float program. (Photo by Staff Sgt. Kasie Pavasko)

What to Do About Operational Readiness Floats

Is the Army's operational readiness float concept still a necessary peacetime policy and readiness enabler?

■ By Capt. Andrew Horsfall, Capt. Kimberly Osorio-Torres, Capt. Jon Watson, and Capt. David Wyche

Major General James Wright fellows at the College of William and Mary's Mason School of Business undertook a capstone project for determining the validity of the Army's operational readiness float (ORF) program as a readiness enabler. The team used tools and concepts developed through Lean Six Sigma (LSS) training and through their 14-month MBA program.

Under the overarching LSS construct of define, measure, analyze, improve, and control, the team incorporated diverse methods of study and gathered multiple sources of quantitative and qualitative data to shape their assessment and findings. The project team devised courses of action (COAs) ranging from maintaining the status quo to eliminating ORFs altogether.

ORF Background

ORF assets serve to maintain unit readiness. But in the wake of downsizing and budgetary shortfalls, should the Army continue to maintain ORFs?

The ORF program has endured from its inception more than four decades ago. The program ensures that a unit's equipment readiness does not fall below acceptable lev-

els, which are often benchmarked by the 90-percent threshold outlined in Army Regulation (AR) 220-1, Army Unit Status Reporting and Force Registration–Consolidated Policies.

Float equipment is a form of safety stock that provides a fully mission capable piece of equipment in exchange for a not mission capable piece of equipment. The primary regulations governing the ORF program are AR 750-1, Army Materiel Maintenance Policy and AR 710-2, Supply Below the National Level.

The program’s existence stems from a time of limited asset visibility, less efficient lines of communication, and lengthy supply chains. However, changes in the Army’s force structure and doctrine from 14 years of continuous conflict indicate that the ORF program may no longer be relevant.

The ORF program experienced computation issues early in its existence. After a period of intense study and assessment in the 1970s and early 1980s, the program exhibited a period of relative stability and effectiveness until the post-9/11 era. A series of structural changes occurred in response to the fast-paced evolution of the Army during Operations Enduring Freedom and Iraqi Freedom. The ORF program is now undergoing another assessment.

As the military focused its efforts on operations in Afghanistan and Iraq, the Army’s operating tempo, combined with Army Force Generation, created a reliance on theater-

provided equipment. Many units were no longer deploying with organic assets.

In the meantime, units preparing to deploy could use left-behind equipment, often in a temporary loan capacity, to fill training equipment needs. This wartime equipping strategy led to a decreased emphasis on peacetime readiness and a decreased need for ORF equipment.

ORF institutional knowledge and best practices eroded. Standard Army management information systems did not sufficiently capture the limited number of transactions taking place. Documentation was not thorough, and there was widespread miscoding of assets. The lack of historical ORF demand data has made it difficult for leaders to implement data-driven decision-making because analysis is only as good as the data available.

Necessary Actions

Based on the information gathered in the define, measure, and analyze phases of the research project, the team developed four COAs.

If the ORF program persists in any form (as it would in all but one COA), certain steps are necessary for improvement. These actions would be required in COAs 1, 3, and 4:

- Use Global Combat Support System–Army (GCSS–Army) to standardize reporting and data collection.

- Update the Department of the Army critical items list for authorized ORF.
- Assess other float pools and consider consolidation or elimination.
- Enforce existing policy.

COA 1: Maintain

The first COA is to maintain the ORF program in its current state so that units will continue to have ORF equipment. This will result in no change to current budgeting for ORF, nor will it change the mission set.

The primary advantage of COA 1 is retaining flexibility for commanders to authorize and make ORF exchange decisions locally. The main disadvantage is the current \$1.05 billion cost of maintaining the ORF program.

Maintaining the status quo will support the Army during a period of operational and fiscal transition. During the change from the Army Force Generation model to the Sustainable Readiness Model, having forces trained and ready will rely more on unit formations for sustainment versus contracted support.

Taking into consideration anticipated maintenance and supply discipline challenges, ORF will provide flexibility and mitigate readiness shortfalls as the Army goes back to basics. This shift should revive institutional knowledge and restore the program back to functionality.

The problem with COA 1 is its

Criteria for Failure Modes and Effects Analysis			
	Description	Low Number	High Number
Severity	Severity ranking encompasses what is important to the force.	Low impact.	High impact.
Occurrence	Rank the probability of a future failure occurring during the service.	Not likely to occur.	High impact.
Detection	Rank the probability of the problem being detected and acted upon before it happens.	Very likely to be detected.	Inevitable.
Ranking between 1 and 10 (1 = low, 10 = high) for severity, occurrence, and detection level. To calculate a risk priority number, formula = severity x occurrence x detection.			

Figure 1. The operational readiness float program’s key shortfalls and issues were identified in the study’s failure modes and effects analysis. They included a lack of visibility, overlapping equipment pools, and poor management.

failure to address the ORF program's key shortfalls and issues identified in the study's failure modes and effects analysis (FMEA), including a lack of visibility, overlapping equipment pools, and poor management. (See figure 1 on page 15.)

COA 2: Discontinue

The second COA discontinues the ORF program and reallocates

equipment in the Army and looks for further opportunities to shrink the program's footprint. The main effort in this COA is enforcing current guidance and aggressively eliminating unauthorized equipment.

The team chose to start with cutting equipment that was not authorized as ORF. The maintenance master data file (MMDF) currently lists 448 ORF-approved items. Of

should be the driving justifications for ORF equipment.

The need to maintain high states of readiness for missile and radar systems in field artillery and air defense artillery units provides ample reason in U.S. Army Pacific and U.S. Army Europe. Units in the continental United States should be considered with scrutiny, especially if little demand data accumulates.

Equipment density can serve as another criterion. Low-density, mission-essential items are a logical choice for float qualification. This COA does not differentiate high-density versus low-density equipment but offers the idea as a means to further slim down the program.

COA 3 nests with the 2015 Army Posture Statement by forcing self-examination and cutting back on resource commitments. It strikes a balance between maintaining readiness in the face of a complex threat spectrum while enforcing resource discipline.

This COA adequately addresses the failure modes outlined in FMEA if implemented with the aforementioned four required actions. COA 3 also requires a reasonable amount of effort that will produce meaningful results.

COA 4: Reorganize

The last COA entails a significant restructuring of the ORF program through reassignment to the Army Materiel Command (AMC). Units would no longer maintain possession or perform maintenance on ORF equipment. AMC owns logistics readiness centers (LRCs), formerly known as directorates of logistics, which report to the Army field support brigades (AFSBs). There are 73 LRCs worldwide that support virtually every installation.

The LRC will maintain property accountability in place of the supply support activity. The fact that the LRC falls under the installation property book office would ensure that the ORF could reside on installation property books that are

Given the anticipated struggles with the Army's future budget, the ORF program warrants greater scrutiny, active oversight, and selective retention of mission-essential equipment for key units.

current on-hand ORF assets to fill critical operational shortages in units across the Army.

The estimate includes planned procurement as well as current and future carrying costs to maintain the equipment. (Carrying costs are those incurred by maintaining, storing and warehousing, or otherwise keeping a piece of equipment.)

Discontinuing the ORF program would allow approximately \$832 million to be used for other programs or higher priority requirements, particularly to fill unit shortages. It also would require divesting current on-hand ORF assets.

Even though COA 2 addresses failure modes identified in the FMEA, it discards a program with past performance and future potential. Removing a degree of flexibility from commanders could adversely affect training. Simply ending the program resolves many current failure modes, but the future operational landscape may present unforeseen challenges that the ORF program could help meet.

COA 3: Scale Down

The third COA significantly pares down the current amount of ORF

this number, 244 are removable because they are obsolete or explicitly eliminated.

This study's June 2015 data pull of entries with property book identification code F (PBIC F), which is the specific code designated for ORF equipment, yielded 325 items, but only 6 percent of them matched MMDF ORF authorizations. The remaining 94 percent of the items on the list were improperly coded as ORF equipment.

The data pull of all PBIC F-coded items in the Army totals over \$198 million. Factoring in that the 18 percent carrying cost brings the total to nearly \$234 million, the reconciliation of PBIC F and MMDF yields a reduction of approximately \$189 million. This includes both unit price and carrying cost for all items that should not be classified as ORF.

Enforcing existing policy reduces the ORF program to \$32.9 million (and carrying costs that amount to \$5.9 million). The grand total of all reductions equals a cost savings or asset redistribution value of nearly \$195 million.

A second important aspect of COA 3 is examining units eligible for ORF. Geographic location or mission set

managed by an accountable officer. The LRCs would also perform maintenance to ensure equipment is fully mission capable.

The capabilities of LRCs are robust and configurable to support requirements beyond the ability of resident units. The drawdown of predeployment training equipment will leave the LRCs with a potential mission gap.

The migration of LRCs from the Standard Army Maintenance System–Enhanced to GCSS–Army will be complete by August 2017, enabling these units to send Army Materiel Status System reports. The consolidation of accountability and maintenance functions resolves this dysfunctional aspect of the current ORF program.

LRCs work closely with the installation senior commander. Many organizations currently use a senior logistician such as the deputy commanding general for support as the ORF authority to execute transactions.

Decision authority to conduct an ORF transaction would reside with the installation senior commander, who could delegate responsibility to the ranking sustainment authority. This relationship would consolidate mission responsibility under more natural roles and further enhance the direct support relationship between AMC and tactical units.

One of the biggest benefits of this construct is having an “honest broker.” Tactical units are prone to making internal decisions to misuse float equipment, such as not completing lateral transfers, engaging in controlled substitution and cannibalization, or using ORFs as training equipment. Having an impartial organization assessing the eligibility for float transactions mitigates this misuse.

This COA recognizes that LRCs range in scale and capability. There are some intricacies that may or may not affect putting this COA in place. Span of control could be an issue. For example, the 406th AFSB has many smaller LRCs when compared to the large-scale LRCs belonging to the

407th AFSB. For these LRCs, the AFSBs could nest their obligation to support ORF equipment under larger LRCs.

Cost is a significant concern for COA 4. Contractors are expensive and are reducing in number. Work done by AMC usually costs a premium because of the quality and expertise its force has to offer; this means that carrying costs will increase significantly in the continental United States. But COA 4 is logical when one considers the limited volume of equipment managed.

As mentioned in COAs 1 and 3, the number of incorrectly coded ORF items must be reduced. Only the most critical equipment for special missions should qualify. COA 4 uses the equipment value of \$32.9 million identified in COA 3. Applying a significantly higher carrying cost for AMC amounts to an additional yearly cost of \$19.8 million, which is still an improvement over COA 1. Even if COA 4 leads to an overall lower program cost, the higher individual sustainment costs will not be popular.

Because of unforeseeable issues of the Army’s transition from counterinsurgency to forcible-entry operations, the lack of hard demand data, and the potential for a reduced level of ORF, the team recommends COA 3; the program should be reduced.

It is premature to end the Army’s ORF program. There is strong evidence that ORF is not a readiness enabler, making it an appealing target during budget reductions. The program undeniably is in a state of mismanagement.

However, to completely eliminate it as the Army transitions would be irresponsible and shortsighted. Given the anticipated struggles with the Army’s future budget, the ORF program warrants greater scrutiny, active oversight, and selective retention of mission-essential equipment for key units.

The ORF program requires certain measures to introduce standardiza-

tion and reliable reporting. The Army should create a function in GCSS–Army that truly tracks demand data. It needs to include frequency, duration, remarks for justification, and an indication if ORF positively affects readiness.

Determining the demand for ORF is essential to determining what the appropriate level of safety stock should be. Statistical analysis deduced from historical data is the most appropriate way to identify true needs. This level of analysis must precede any decision for wholesale program elimination. In the meantime, efforts should concentrate on seeking efficiencies and purposeful applications that preserve the ability for fluctuation in the face of future challenges.

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~~Marching~~ Sailing to Victory

Strategic sealift reductions jeopardize the Army's ability to decisively defeat our future enemies.

■ By Lt. Gen. Stephen R. Lyons





The MV Endurance, a U.S. roll-on roll-off carrier vessel, receives military cargo at the Port of Corpus Christi, Texas, on Feb. 18, 2010. (Photo courtesy of the U.S. Transportation Command)

FEATURES

The aging of the organic fleet, the dwindling supply of commercial ships, and the loss of crewmembers for both fleets pose great risk to our decisive land force.

A major strategic advantage of the United States is its ability to project and sustain forces anywhere and anytime on the globe. However, the Army's ability to decisively defeat our future enemies is at risk. Let me explain.

As a senior Army logistician, I know that most Army professionals are very familiar with the detailed planning required to get unit equipment and personnel from a fort to a port of embarkation. We are also familiar with reception, staging, onward movement, and integration efforts to get our Soldiers and gear from the port of debarkation to the foxhole and engaged in the fight.

But, as the U.S. Transportation Command deputy commander, I'd like to highlight a crucial segment of transport that occurs in the vast deep-blue space over which the lifeblood of any decisive U.S. combat power must travel. Although we don't often discuss it, as Army professionals we must recognize and advocate for the critical combat enabler known as our nation's strategic sealift.

Strategic Sealift

Our nation's strategic sealift capability comprises two distinct fleets. First is the gray-hulled organic fleet, consisting of continental United States-based vessels that are in a reduced operating status and pre-positioned vessels that are at strategic locations worldwide. This fleet assists an immediate wave of forces as we surge the Army to the fight.

The second fleet consists of U.S. flag, militarily useful, commercial vessels made available to us through the Maritime Security Program and the Voluntary Intermodal Sealift Agreement. These commercial ships participate in both domestic and international commerce, but when mobilized, they are available to augment our organic fleets. Having these ships available ensures the United States retains a strategic sealift capability that is ready for war.

The fact that these commercial ships are U.S. flag is critical because there is no guarantee we can compel foreign-flag vessels to sail into potentially hostile areas on our behalf. During Operation Desert Shield, 13 foreign-flag vessels balked at entering the area of operations, and we experienced similar problems with foreign-flag ships during the Vietnam War.

Greater Capacity for the Warfighter

Some may counter that even without U.S. flag ships we could simply fly our equipment and personnel to the fight. Physics says otherwise. A single ship can carry approximately the same amount of cargo as 300 C-17 Globemaster III aircraft. Considering the number of sorties required to move a decisive combat force, we simply do not have the airlift capacity to move our warfighters on a time line that meets national security objectives.

In fact, 25 years ago, during the six-month buildup to Operation Desert Storm, we moved more than 2 million tons of equipment by sea. Over the course of that operation, 95 percent of all cargo went by sea. Only 5 percent went by our maxed-out airlift fleet.

During Operations Enduring Freedom and Iraqi Freedom, U.S. commercial vessels moved 63 percent of all military cargo. To move a decisive force to the point and time of need, we must use strategic sealift.

Risks to Strategic Sealift

Several factors have combined to put our nation's strategic sealift capability at risk.

Fleet age. First, the organic fleet is aging. Our surge vessels are an average of 38 years old and will begin to reach their 50-year service life in the 2020s. The U.S. Transportation Command is forecasting that 4 million square feet of organic surge roll-on-roll-off capacity will be gone by 2030.

Less commercial availability. Of greater concern is the overall trend



The MV Cape Texas rides out a storm while transporting military vehicles. The vessel is a roll-on/roll-off ship with the Ready Reserve Force of the Department of Transportation's Maritime Administration. When activated, the ship becomes part of the Navy's Military Sealift Command. (Photo courtesy of the Military Sealift Command)

within the commercial U.S. flag fleet; there has been a long-term decline in the number of available ships. At its peak in the 1950s, more than 1,000 U.S. ships were engaged in international trade. Today only 78 ships are similarly engaged. Recent declines have been the most dramatic in the history of the program; the Army has lost access to one-fourth of the commercial fleet in the past three years.

Fewer mariners. Most are unaware that both the Navy's organic fleet and U.S. flag commercial vessels draw from the same pool of civilian mariners. When U.S. shipping companies shift their vessels under the flags of foreign nations that offer lower overall operating costs, jobs for U.S. mariners simply go away. And, with only 78 ships engaged in international trade, there are just enough jobs to main-

tain the minimum pool of mariners needed to move our Army in time of war.

The Army needs ships and mariners, and it is a need most of us do not readily recognize or appreciate. The aging of the organic fleet, the dwindling supply of commercial ships, and the loss of crewmembers for both fleets pose great risk to our decisive land force.

We must retain a decisive land force to counter the threats we will face in tomorrow's increasingly complex environment. Force 2025 and Beyond will provide the decisive land force of the future. But if we do not raise the discussion of ship recapitalization and manning, we may not be able to get to the fight.

There is no doubt that "boots on the ground" are the ultimate guarantor of victory. But without strate-

gic sealift, we join the ranks of most of the world's armies—relegated to an in-garrison force that is likely ineffective at deterring its enemies. The simple truth is that the Army must sail to the fight before it can march to victory.

Lt. Gen. Stephen R. Lyons is the deputy commander of the U.S. Transportation Command at Scott Air Force Base, Illinois. Lyons previously served as the commander of Combined Arms Support Command and as commanding general of the 8th Theater Sustainment Command. He holds a bachelor's degree in criminal justice from the Rochester Institute of Technology, a master's degree in national resource strategy from the Industrial College of the Armed Forces, and a master's degree in logistics management from the Naval Postgraduate School.

The background image shows a large M1A2 Abrams main battle tank being loaded onto a C-17 Globemaster III aircraft. The tank is positioned on a loading platform, and its turret and main gun are visible. The aircraft's interior structure, including the cargo door and support beams, is also visible. The scene is set in a large hangar or loading area, with various equipment and personnel visible in the background.

IMCOM Enables Mobilization Readiness

The Installation Management Command assists supported commanders by acting as the functional integrator for delivering trained and ready forces and their equipment to a theater of operations.

■ By Lt. Gen. Kenneth R. Dahl

Airman 1st Class Kenneth Whitler, a 7th Airlift Squadron aircraft loadmaster from Joint Base Lewis-McChord, Washington, directs an M1A2 Abrams main battle tank onto a C-17 Globemaster III aircraft at Ramstein Air Base, Germany. Airmen and Soldiers from across the U.S. European Command theater worked together to transport two tanks to Bulgaria to participate in multinational training in support of Operation Atlantic Resolve.



The Installation Management Command (IMCOM) has long played an important role in mobilizing, training, and deploying forces from the United States to overseas locations.

Today's environment places great responsibility on IMCOM's garrison commands to integrate functions and provide vital deployment support to senior commanders at power projection platforms and all Army

installations.

The current emphasis on the persistent and agile posturing of forces versus a permanent forward presence means there will be fewer forces stationed outside of the continental United States and more rotational forces to meet combatant command requirements. These rotational forces need to move quickly and easily to participate in training in theater.

FEATURES

“IMCOM touches every Soldier every day. No other command can say that.”

—Command Sgt. Maj. Jeffrey Hartless, Installation Management Command

As future conditions are unknown and constantly changing, the Army Operating Concept calls for the ability to rapidly deploy and transition forces. To accomplish this, the Army uses IMCOM to integrate and deliver services, quickly mobilize reserve component forces, and thoroughly transition active and reserve component formations from the fort to the foxhole.

Today IMCOM–Europe and IMCOM–Pacific are supporting U.S. Army Europe and U.S. Army Pacific through an unprecedented transformation in the way permanent forces are stationed.

Simultaneously, they are integrating efforts to deliver support such as reception, staging, onward movement, and integration to regionally aligned forces. Enabling Army readiness is IMCOM’s number one priority.

Supporting Garrison Missions

Garrison command teams work hard every day to ensure facilities are maintained to support training and prepared to handle the increased activity of mobilization and deployment. But for the past decade, the Army has deliberately underfunded infrastructure, which has presented challenges at home stations.

IMCOM professionals are making a clear case at the Department of the Army headquarters that the Army must invest in deployment and readiness infrastructure to avoid mission failure in the future.

Army Regulation 600-20, Army Command Policy, clearly states that the installation senior commander “is responsible for synchronizing and integrating Army priorities and initiatives at the installation.” But many tenant organizations and service providers on an installation are not under the senior commander’s authority or in the direct reporting chain.

The regulation further states that the garrison commander “is the senior commander’s senior executive

for installation activities [and] coordinates and integrates the delivery of support from other service providers.” This integration is a vital role played by a garrison in support of all missions but especially mobilization and deployment.

When preparing a unit for movement, a garrison must integrate multiple installation programs and services to facilitate rapid deployment. The primary concerns are related to logistics, and the garrison team integrates the many services provided by the Army Materiel Command’s logistics readiness centers (LRCs).

LRCs facilitate the movement process in several ways:

- Assisting units with load planning.
- Preparing equipment for movement (inspection and repair).
- Cross-leveling equipment to fill shortages.
- Assisting units with turn-in of excess equipment.
- Supervising rail load teams.
- Processing convoy clearances.
- Supervising arrival/departure airfield control groups.
- Providing troop transportation for training events.
- Scheduling air travel for troop movements.
- Ordering ships for maritime travel from the U.S. Transportation Command.

LRCs work closely with a garrison’s directorate of plans, training, mobilization, and security to ensure all required logistics functions and services are properly scheduled and provided on time.

Like their equipment, active and reserve component Soldiers must remain ready to deploy at all times. The garrison directorate of human resources performs this critical mission. Its job is to ensure all Soldiers are validated for deployment according to Army personnel policy guidance for overseas contingency operations.

The directorate of human resourc-

es also provides full-service redeployment support and reintegration for all Soldiers returning from overseas deployments. It provides reassignment, sponsorship, separation, retirement, and transition services as required.

Orchestrating Mission Success

From conducting monthly home-station Soldier readiness checks to providing facilities at the National Training Center for brigade combat team predeployment training, IMCOM is the integrator and synchronizer that orchestrates mission success.

When a unit is deploying, the garrison determines a consolidation plan for rear detachments to save costs, focus resources, conserve energy, and make facilities available for renovation or maintenance. It provides personal vehicle storage lots and assists in accounting for unit equipment.

Although unit commanders are ultimately responsible for their Soldiers and families, IMCOM provides indispensable assistance through programs and services that prepare Soldiers and families for the challenges of being apart.

For example, Army Community Service provides education services that help Soldiers and families prepare for separation. It provides information about deployment, reintegration stressors, and indicators of mental health problems to build the resilience of Army families. It also trains, coaches, and manages funds for family readiness group leaders.

Military family life counselors help Soldiers and families develop coping mechanisms and learn about community resources.

When it comes to deployments, units are more resilient if they coordinate with the garrison to connect their families with IMCOM support services, attend preparation classes, and build a strong support network.

At many joint bases, like Joint

Base Lewis-McChord, Washington, the presence of joint operational forces like the Army's Pacific-focused I Corps and the Air Force's 62nd Airlift Wing demands the involvement of the joint base garrison command team in the day-to-day maintenance of infrastructure to support mobilization.

While serving in I Corps, I saw firsthand the vital role played by the garrison in the U.S. Pacific Command and U.S. Central Command deployments and redeployments of several special operations forces units, the 7th Infantry Division, I Corps headquarters, and the 593rd Expeditionary Sustainment Command.

At Joint Base Lewis-McChord and elsewhere, the joint base commander is uniquely positioned, resourced, and chartered to bind together supportive relationships across multiple commands, agencies, and organizations on the installation. Garrisons enable the projection of combat power and operationally ready forces anywhere around the globe.

Expecting Tough Conditions

Unit rotations to Korea, Europe, and other locations are neither unaccompanied tours nor combat deployments, so overseas contingency operations funds are not available for these missions.

Soldiers should expect to train hard and to live in austere conditions with minimal services. While discussing this at a U.S. Army Europe commanders conference, leaders considered "Spartan plus Wi-Fi" as an appropriate benchmark.

This quote is from the original 1950 edition of the *The Armed Forces Officer*: "Though Americans enjoy a relatively bountiful, and even luxurious standard of living in their home environment, they do not have to be pampered, spoon-fed and surfeited with every comfort and convenience to keep them steadfast and devoted, once war comes. They are by nature rugged, and in the field will respond most perfectly when called on to

play a rugged part."

Fine-Tuning Services

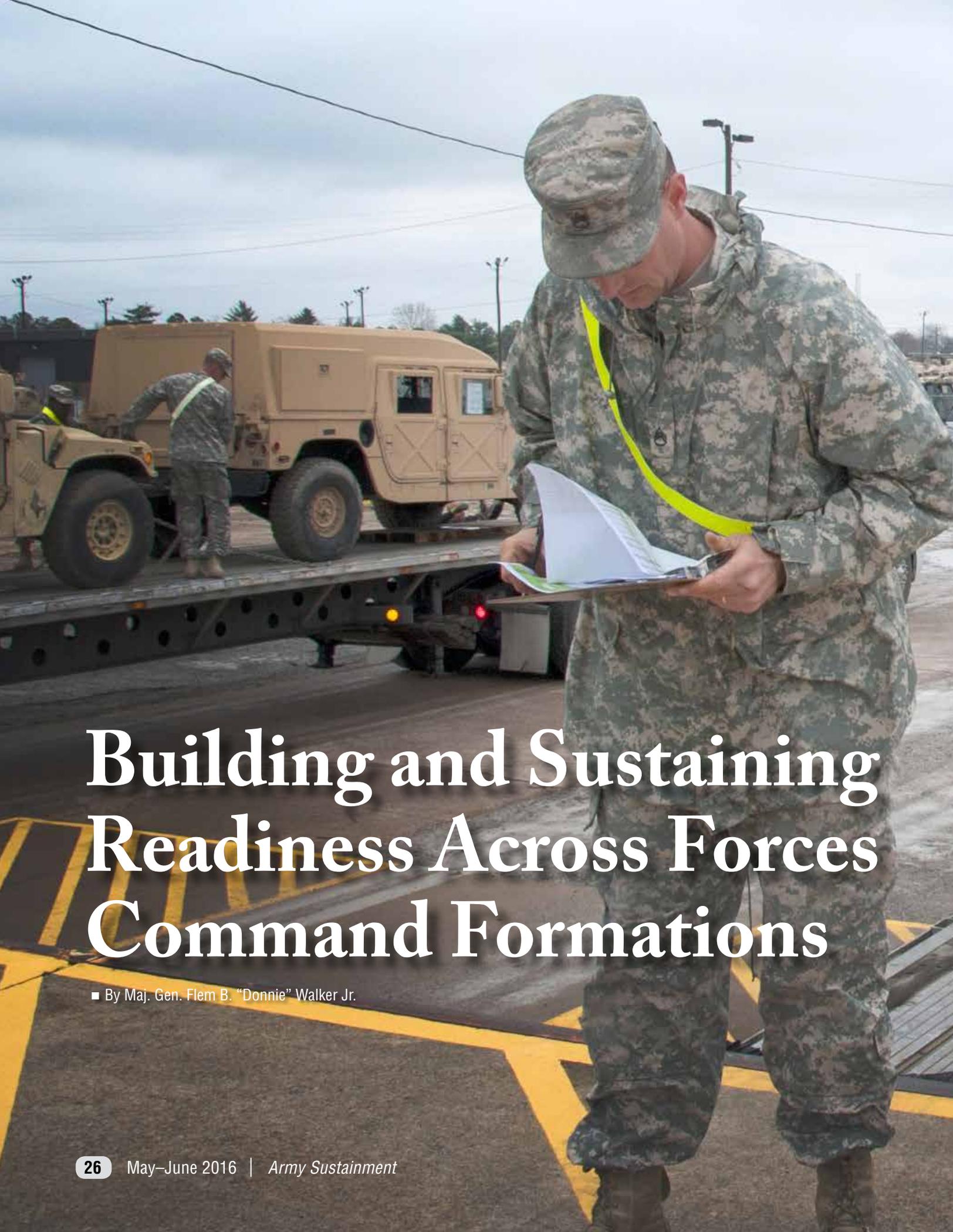
In garrisons, IMCOM is working with senior commanders to identify programs that have grown beyond their original intent and to transform them to meet the actual needs of Soldiers where the demand is the greatest.

IMCOM will seek policy changes to bring this back into alignment and ensure the programs and services it provides going forward contribute directly to Soldier and unit readiness and rapid deployment.

IMCOM will seek public and private partners to provide alternatives to the programs that are eliminated to support readiness. IMCOM has made great strides in developing partnerships for this purpose over the past decade and sees this as a key element of its strategy going forward.

With a smaller force and fewer resources, the Army must pay close attention how it uses time, money, and leaders to meet its global commitments. This requires even greater focus on the ability to deliver trained and ready forces and their equipment to a theater of operations rapidly and safely. IMCOM will be there as the functional integrator and primary supporting unit every step of the way.

Lt. Gen. Kenneth R. Dahl is the commander of the Installation Management Command. He is a graduate of the United States Military Academy and has a master's degree in social psychology from the University of North Carolina at Chapel Hill and a master's degree in national security and strategic studies from the Naval War College. He served as a national security fellow in the John F. Kennedy School of Government at Harvard University and completed a federal executive fellowship at the Brookings Institution, where he focused his efforts on U.S. government interagency reform.



Building and Sustaining Readiness Across Forces Command Formations

■ By Maj. Gen. Flem B. "Donnie" Walker Jr.



Staff Sgt. George McGraw, a unit movement officer from the 86th Combat Support Hospital, verifies equipment on his manifest on March 26, 2016, at Fort Campbell, Kentucky. (Photo by Sgt. Leejay Lockhart)

FEATURES

“Readiness is our No. 1 priority ... there is no other top priority. If you ever think you’re going to need an Army, if you think you are going to use an Army, then you better have a good one, and it better be ready.”

—Gen. Robert B. Abrams,
Forces Command
Commanding General

For the past 14 years, Army forces have trained for and executed combat deployments to engage in counterinsurgency (COIN) operations and support partner nations’ forces. They have done this with great success but are using a readiness model that is far different from what the Army needs in today’s operational environment.

ARFORGEN

The Army Force Generation (ARFORGEN) model was the right approach for the previous operational environment and readiness demands. Units focused on manning, equipping, and training to build readiness for a known mission and a relatively short deployment and expected to consume that readiness during the deployment.

Units returning from a deployment went over the “readiness cliff” by design. They lost trained leaders and Soldiers to permanent change of station moves and professional development opportunities.

Equipment used during deployment was turned in for months of required reset, and left-behind equipment was reclaimed from a low-usage status after long-term storage. Units then started the process of rebuilding readiness throughout their training phases, making themselves available and ready for the next deployment.

ARFORGEN has led to significant atrophy of several fundamental components of logistics readiness at all echelons because it does not focus on building and maintaining sustained readiness. Inadvertently, this has resulted in Soldiers not knowing how to properly maintain their equipment and leaders not being skilled in managing maintenance, supply discipline, and property accountability. This way of doing business has created an unprecedented buildup of excess equipment and supplies and a lack of fiscal stewardship.

Sustainable Readiness Model

As we transition from ARFOR-

GEN to the Sustainable Readiness Model, our formations must be surge-ready but rotationally focused. Units must be ready to deploy at any time and train under decisive action versus COIN only conditions.

Units are back to fully using all equipment authorized by their modified tables of organization and equipment. They are exercising vehicles and systems at a higher operating tempo and conducting more training at home station. This has increased the demand signal for critical class IX (repair parts) from our industrial base and has led to longer lead times for parts.

Our Army does not have the resources to withstand a post-mission readiness cliff. Therefore we must focus our attention on enhancing the fundamental logistics components needed to master materiel readiness.

The Army now faces a far different operational environment—one that requires sustained readiness of our units. The U.S. Army Operating Concept: Win in a Complex World calls for units that will not fall off the readiness cliff. The Army has to build enduring and sustained readiness that enables it to engage in a wide range of ongoing missions, including combat deployments, theater security cooperation training exercises, homeland defense, and little-to-no-notice global response requirements. In doing so, units must also sustain their capabilities to meet any and all unknown follow-on missions.

State of FORSCOM Logistics

The mission of Forces Command (FORSCOM) is to train and prepare a combat-ready, globally responsive total force in order to build and sustain readiness to meet combatant command requirements. To complete that mission, the commanding general of FORSCOM has implemented six priorities, “The Freedom 6,” for all FORSCOM leaders:

- Maximize unit readiness.
- Operationalize the Army Total Force Policy.

- Master the fundamentals.
- Strengthen leader development.
- Care for Soldiers, civilians, and families.
- Inform the future force.

To reinforce the FORSCOM mission and the commander's priorities, the FORSCOM G-4 is promoting the State of FORSCOM Logistics white paper, which was published in 2015, to address the state of logistics and materiel readiness throughout the command. The white paper has become the basis of a FORSCOM campaign that focuses on key fundamentals of logistics and materiel readiness.

The white paper describes some of the challenges associated with each of the seven logistics components found in figure 1. Commanders and their staffs should focus resources on each component simultaneously. This will ensure units have the right resources needed to keep their equipment ready to meet not only the Army maintenance standard but also, more importantly, the readiness requirements of the combatant commanders.

Investing in the seven logistics components described in the white paper will deliver materiel readiness to units and sustain their readiness during home-station and combat training center (CTC) training and while deployed. The logistics components are logistics leader training, equipment distribution and redistribution, excess divestiture, maintenance management, supply discipline, total Army interoperability, and fiscal stewardship.

Logistics Leader Training

Logistics leader training underpins all of the other components of logistics readiness. The effectiveness of any readiness program starts with how well leaders are trained and developed to lead their Soldiers to achieve readiness standards.

Leaders at all echelons need to know the fundamentals of supply and maintenance well enough to lead their Soldiers to meet equipment

readiness objectives in accordance with Army supply and maintenance policies.

FORSCOM must adopt a culture that values officers, warrant officers, and noncommissioned officers who possess the technical skills needed for command logistics discipline and managing scarce resources.

FORSCOM encourages its subordinate commands to conduct routine unit command maintenance, formerly referred to as "motor stables," as a regularly scheduled training event. The term "unit command maintenance" emphasizes the commander's involvement.

Company-level leaders must be trained in the motor pool before they lead their platoons to a range, a local training area, or a CTC. Commanders also are encouraged to conduct maintenance terrain walks to develop maintenance leaders.

The Combined Arms Support Command has developed a maintenance terrain walk training video that provides units with a resource

for implementing walks for leader professional development and overall readiness. A link is available through the Sustainment Unit One Stop webpage: http://www.cascom.army.mil/g_staff/g3/SUOS/index.htm.

Equipment Distribution

To achieve Army readiness goals, units must continue to manage the distribution and redistribution of authorized equipment. Units cannot train or deploy without having the right type and amount of equipment on hand (EOH).

To increase EOH readiness ratings, FORSCOM has engaged in a campaign called the Unit Equipping and Reuse Working Group-Expanded (UERWG-E). This is an expanded adaptation of an earlier effort designed to reset EOH readiness for units upon redeployment.

The UERWG-E program is designed to accomplish two major objectives: first, to identify equipment shortages and sourcing solutions in



Figure 1. The Forces Command's Seven Components of Logistics Readiness.



Army mechanics work on the underbelly of a humvee in the maintenance tent of the 542nd Support Maintenance Company on Feb. 18, 2016, at Fort Polk, Louisiana. (Photo by Sgt. Aaron Ellerman)

order to maximize EOH readiness and, second, to identify excess equipment for transfer or turn-in. Transferring equipment to other Army commands, Army service component commands, or a National Guard or Army Reserve unit, helps build EOH readiness elsewhere in

the force.

FORSCOM conducted UERWG–E events at 11 major home-station installations in fiscal year 2015. The next round of UERWG–E events is scheduled for this fiscal year and will have greater command emphasis on building readiness.

Basic issue items (BII) and components of end items (COEI)	Ensure all authorized BII and COEI are present or on order.
Modification work orders (MWOs)	Ensure all routine, emergency, and urgent MWOs are applied and reported in the Modification Management Information System.
Scheduled services	Perform equipment services within the scheduled service intervals.
Higher level repairs	Corrective actions requiring higher level maintenance are put on a work order.
Parts and supplies	Ensure parts that are not on hand are on valid funded requisition.
Repairs and services	Complete corrective actions when required parts are on hand.
All faults identified	Use technical manual 10/20 checks to identify faults.
Fully mission capable	If all are complete, the equipment is fully mission capable.

Figure 2. The Army maintenance standard.

Excess Divestiture

Under the ARFORGEN cycle, units accumulated excess supplies and equipment at an unprecedented rate. Collectively, FORSCOM has thousands of pieces of excess equipment, both standard and non-standard, piled up at various home stations. No organization, from the unit supply room to the Army Materiel Command (AMC), is structured to deal with such a staggering amount of excess equipment, about half of which must be brought up to 10/20 standard for transfer.

FORSCOM is teaming with the Defense Logistics Agency, Army G-4, AMC, and subordinate units to create an excess equipment divestiture plan that will ensure surge capabilities for each stakeholder. It will be designed to unburden units, transfer excess equipment to units with shortages, and ship pure excess to depots to be included in foreign military sales, commercial auction, or demilitarization. This plan is an extension of the UERWG–E effort.

Maintenance Management

Arguably second only to leader training in level of importance is maintenance management, which encompasses the range of tools and activities needed to develop maintenance policy and resource and plan, train, and execute maintenance operations.

FORSCOM’s command training guidance for fiscal year 2016 directs that units “will execute a combined arms training strategy that integrates sustainment training.” The guidance goes on to explain that maintaining equipment to the 10/20 standard—in accordance with Army Regulation 750-1, Army Materiel Maintenance Policy (for ground systems), and Army Regulation 700-138, Army Logistics Readiness and Sustainability (for aviation systems)—is a readiness imperative. (See figure 2.)

The FORSCOM guidance makes it clear that commanders are responsible for maintaining their equipment

to standard during home-station and CTC training and while deployed.

The guidance further requires commanders to carefully manage all resources (manning, funding, facilities, equipment, and time) to achieve 90-percent operational readiness rates for ground fleets and 75-percent fully mission capable rates for aviation fleets.

A critical element for achieving fleet readiness in both ground and air systems is teaching and training operators and crews how to maintain their gear. The FORSCOM guidance directs commanders to train their leaders and Soldiers to perform preventive maintenance checks and services and scheduled services on their equipment as a qualification that is “no different from qualifying on a rifle, tank or aerial gunnery range.”

Commanders are now focusing on the fundamentals of maintenance training in an effort to master their weapon systems.

Supply Discipline

Disciplined maintenance programs require disciplined supply operations, including the management of authorized stockage lists (ASLs), shop stocks, and bench stocks. FORSCOM is working closely with AMC to right size ASLs and optimize shop stocks and bench stocks based on captured demand and use data.

Ensuring disciplined demand at the unit level is critical to driving readiness throughout the organic and commercial industrial bases. Disciplined demand drives down customer wait time and drives up availability and operational readiness. FORSCOM brigade combat team and combat aviation brigade commanders must own the ASL review process to help shape the breadth and depth of the ASL, particularly the stock of readiness drivers and shop stocks.

Total Army Interoperability

FORSCOM is enforcing the Army Total Force Policy by includ-

ing it in command training guidance, building readiness through the Army synchronization and resourcing process, and designing and implementing the Sustainable Readiness Model to replace ARFORGEN.

The Total Force Policy presents some unique challenges and opportunities in the materiel readiness

class IX requirements (especially shop stock), cross-leveling excess stock to fill shortages, and imposing logistics policies that prevent waste.

The FORSCOM G-4 staff uses several tools to gauge the effectiveness of our efforts to build and sustain materiel readiness in our formations, including the Materiel

“Restoring our ability to execute expeditionary logistics will only be accomplished by leaders who know what right looks like, and then coach, teach, and mentor that understanding across their formations.”

—Lt. Gen. Gustave “Gus” Perna, Army G-4

arena, particularly in maintenance and supply policy compliance and readiness funding.

The FORSCOM G-4 staff is taking a wider view of materiel readiness across Army Reserve and National Guard units. It is identifying opportunities for equipment transfers to improve EOH readiness, monitoring fleet readiness, and helping to shape echelons-above-brigade sustainment training opportunities through partnership training and CTC rotations.

Additionally, the FORSCOM G-4 is participating in the Total Army Analysis process to ensure sustainment capabilities are adequately represented.

Fiscal Stewardship

The State of FORSCOM Logistics white paper addresses fiscal stewardship as a key component to building and sustaining materiel readiness. One look at the program objective memorandum for 2018 to 2022 reveals a startling funding shortfall.

As logisticians we need to ensure we protect precious operation and maintenance dollars by validating

Common Operating Picture system to continuously monitor fleet readiness, the Net-Centric Unit Status Report application to collect monthly readiness rates, a monthly FORSCOM logistics readiness review that spotlights select elements of the white paper, and a semiannual G-4 summit that focuses on developing strategic solutions to the most pressing materiel readiness challenges.

Every aspect of materiel readiness is relatively complex, but all are fundamental to the mission of delivering trained and ready forces to our combatant commanders. By focusing on the seven components of logistics readiness, FORSCOM is on track to reclaim mastery of its logistics core competencies and ensure the sustained materiel readiness of our warfighting formations.

Maj. Gen. Flem B. “Donnie” Walker Jr. is the Forces Command (FORSCOM) G-4. Headquartered at Fort Bragg, North Carolina, FORSCOM provides training and readiness oversight for more than 750,000 active duty and reserve component Soldiers.



Is the Army Ready for Expeditionary Operations?

Retired Maj. Gen. Charles W. Fletcher Jr., who took part in one of the Army's last major expeditionary efforts, provides insight into the Army's preparedness for expeditionary operations.

■ By Arpi Dilanian and Taiwo Akiwowo

Soldiers from the 143rd Sustainment Command (Expeditionary) defend an entry control point during Combat Support Training Exercise 78-16-01 at Joint Base McGuire-Dix-Lakehurst, New Jersey, on March 12, 2016. The Army Reserve exercise is designed to challenge Soldiers to improve and sustain skills necessary during a deployment. (Photo by Staff Sgt. Dalton Smith)



FEATURES

The problem appears to be that the policies and procedures to encourage multifunctionality were done, at least in part, by discouraging functional expertise. The result is an erosion of functional expertise and the loss of balance between the two.

During his 37 years of service, retired Maj. Gen. Charles W. Fletcher Jr. led numerous mobility and logistics commands. The Transportation Corps officer was the commanding general of the 3rd Corps Support Command during Operation Iraqi Freedom. He was the commanding general of the Military Surface Deployment and Distribution Command and eventually retired from the military while serving as the director of operations and plans for the Transportation Command.

Fletcher was also involved in the logistics planning and execution for one of the Army's last major expeditionary efforts, Operation Iraqi Freedom 1. In this interview, we sat down with him to get his thoughts on the Army's efforts to improve force projection for expeditionary operations and the challenges it faces in this arena.

What is the biggest challenge facing the expeditionary deployment process?

I think there is a lack of recent experience in expeditionary deployment. We certainly have 15 years of deployment experience, but that involved long lead times, established transportation capabilities, and mature theater distribution networks.

The last major expeditionary deployment was in late 2002 and early 2003 for Operation Iraqi Freedom. We [the Army] had a year to determine the forces that were going in, and we had eight different plans. We got better at the planning process over that year, but there were major staging issues.

When we finally deployed into Iraq, all of the Soldiers carried five days of food and water with them because we weren't able to resupply them for the first five days. They went 30 to 60 days without repair parts and 60 to 90 days without hot meals and showers—this is much different from deployments after 2003.

Today's biggest challenge is lack of training with the processes, the communications, the authorities, and the



Maj. Gen. (Ret.) Charles W. Fletcher Jr.

adjustments that you have to make in expeditionary deployments.

What does the Army need to do to recapture its ability to deploy rapidly with no notice?

It's important to know the process, execute it with discipline, give commanders their required resources, and then hold commanders responsible. Put simply, plan your load and load your plan.

What recommendations do you have for how Army units can conduct deployment operations training?

Getting back to basics in deployment operations really starts with a strategic assessment of the Army deployment processes. The first question is, "What is the level of proficiency the Army must achieve in order to be expeditionary?" The next question is, "What are the roles of the key commands and staff?"

The operational environment has changed in the last 10 to 15 years. You have to know what the responsibilities of deploying units, supporting units and organizations, and contractors are and what individual and collective training is needed to validate units for deployment.

If you review Army actions taken

in the late '80s after the Mobility Requirements Study Bottom Up Review Update, you will find a primer on how the Army transitioned from a forward deployed force to an expeditionary force. I was fortunate to be part of that process.

It started with a doctrine review. Once we wrote the required doctrine, we held Armywide rehearsal of concept drills to educate leaders. We did this for over a hundred general officers and thousands of Soldiers. There was associated collective training. There were new advanced individual training courses developed. Deployment training was also put into existing leader development coursework. In addition, we invested in information technologies and infrastructure.

So we don't have to start from zero in recapturing expeditionary capability. I think there is a good blueprint in that update, and it's probably a good way to analyze today's challenges.

You have now been with private industry eight years. What capabilities do you think the Army should retain, and where should industry be leveraged?

The Army has to decide if deployment is a core capability that every unit should perform. Is it a core capability only for those designated as early deploying units? Or should it be a commercially available capability that we provide to units?

My previous experience has taught me that commercial capability is attainable, but it is probably unaffordable and too risky as a solution for early deploying units. On the other hand, requiring every unit to be rapidly deployable is probably too resource-intensive. So a hybrid solution may be best.

It may be viewed as tiered readiness to say we should fully invest and train only expeditionary deployment capabilities for first deployers, but realistically, I think this is the most achievable solution. Units deploying later in a deployment plan have additional time to leverage external capabilities, both

military and commercial, that are not available to early deployers.

What commercial practices should the Army look into to improve the deployment process?

There are three. First, commercial loading of unit equipment. We ran an exercise on this in the late '90s at Fort Hood, Texas, for a signal company. We had a contractor come to the unit motor pool and load all the major equipment for that signal company. The unit rejoined its equipment in Kuwait. The process worked relatively well.

Commercial support teams are the second option. They are analogous to the FORSCOM [Forces Command] deployment support teams that come in to help a unit deploy.

The third is commercial management of the end-to-end deployment process. This is a variation on what we did in Pakistan. No Soldiers could be in Pakistan, so we contracted the delivery of equipment to the port. We had another contractor that picked it up and moved it through the Pakistan ground lines of communication. We had a third contractor who watched the activities of the other two. I am not saying that all of these should be used, but they are available options to consider.

What technologies are available to improve the deployment process?

Cloud computing is the first one that comes to mind. It is the most secure, the most available, and the most conducive to the information sharing that the Army is going to need. Another is automated sizing, weighing, and tagging technologies at the unit and installation levels. They are available and relatively inexpensive.

How has the Logistics Branch affected expeditionary readiness, and what are your thoughts on the future of the Logistics Officer Corps?

In 2008, when the branch was established, it was said that it would

make "pentathletes" of the current logistics "athletes." Pentathletes perform multiple tasks well but don't necessarily excel in every sport.

I was a triathlete in college. I was a very average swimmer, but I masked that weakness by being able to excel in the other two events. I think we need to relook at the logistics tasks of our future force and ensure that if we need a logistics expert with a particular functional skill that we are able to provide it.

This was the original intent of the Logistics Branch. While it created a capability to designate and train officers as multifunctional logisticians earlier in their careers, it also continued existing capabilities to encourage and retain functional expertise. We did not give up functional; we added multifunctional.

The problem appears to be that the policies and procedures to encourage multifunctionality were done, at least in part, by discouraging functional expertise. The result is an erosion of functional expertise and the loss of balance between the two. As a result, overall readiness has gradually degraded.

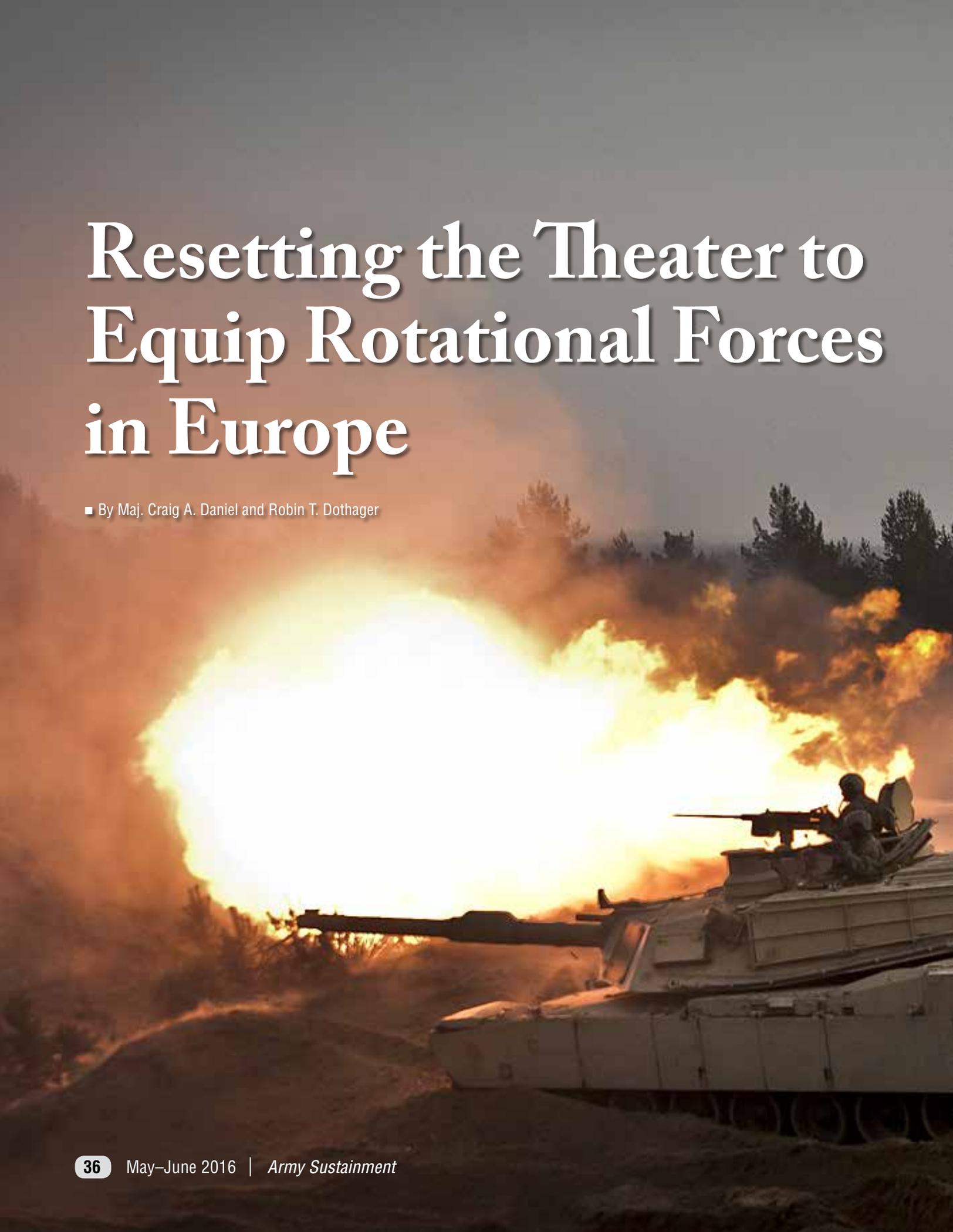
Demonstrated functional capability in several key logistics functional areas, to include expeditionary operations, was no longer tracked, developed, or encouraged. The goals of the Logistics Officer Corps remain sound, but I believe it needs to be reexamined to restore an appropriate balance between multifunctional and functional.

Arpi Dilanian is a strategic analyst in the Army G-4's Logistics Initiatives Group. She holds a bachelor's degree from American University and a master's degree from Rensselaer Polytechnic Institute.

Taiwo Akiwowo is a strategic communication analyst in the Army G-4's Logistics Initiatives Group. She holds a bachelor's degree from Howard University and a master's degree from Trinity University.

Resetting the Theater to Equip Rotational Forces in Europe

■ By Maj. Craig A. Daniel and Robin T. Dothager





U.S. Soldiers fire ceremonial rounds from M1A2 Abrams tanks at the Adazi training area in Latvia in November 2014. (Photo by Sgt. 1st Class Jeremy Fowler)

FEATURES

European activity set equipment provides regionally aligned forces with the tools needed to perform a complex mission in a changing operational environment.

When U.S. Army Europe's (USAREUR's) size peaked after the Cold War, it contained two corps headquarters, more than six divisions, two armored cavalry regiments, various enabling units, more than 277,000 Soldiers, and four divisions' worth of equipment in pre-positioned unit sets.

After the summer of 2013 and Armywide drawdowns that affected USAREUR, it was postured with approximately 29,000 Soldiers spread across two brigade combat teams (BCTs), a theater sustainment command, a combat aviation brigade, and multiple enabling commands.

Earlier that year, USAREUR Soldiers had watched the last remaining M1A1 Abrams main battle tanks depart Germany, marking the end of the era of forward-positioned heavy units in Europe.

Resetting the Theater

Until 2014, units in the European theater had spent a decade focusing on supporting other geographic combatant commands by projecting power and sustaining combat forces deployed in other regions. But Russia's 2014 invasion of the Crimean Peninsula and its resurgence as a threat has affected NATO, Europe, and the United States in a manner not seen since the fall of the Berlin Wall.

In response, the Department of the Army, the Army Materiel Command (AMC), USAREUR, and the 21st Theater Sustainment Command (TSC) have focused on resetting the theater. This is an ongoing task accomplished through numerous initiatives, such as leveraging regionally aligned forces (RAF) and integrating European activity set (EAS) equipment.

To prepare for these initiatives, the Department of Defense, on Jan. 26, 2012, outlined a new defense strategy that included a smaller and more expeditionary Army and a BCT aligned with each geographic combatant command. This strategy inactivated two forward-stationed

heavy BCTs and allocated a brigade stationed in the United States to the NATO Response Force (NRF).

In July 2012, the Army chief of staff approved the EAS for rotational forces. The EAS consists of a modernized combined arms battalion, enablers, and associated support equipment. The purpose of this set is three-fold: to mitigate the loss of the two BCTs, to meet the chief of staff's intent to have stateside forces train in a multinational environment, and to reinvigorate U.S. participation in the NRF.

The Evolution of RAF

In 2013, the 1st BCT, 1st Cavalry Division, was designated as the European Rotational Force and the Army's contribution to the NRF. Battalion-sized maneuver forces were scheduled to execute two 60-day European rotations per year. This plan, coupled with the chief of staff of the Army's approval for the EAS, meant that heavy armor and maneuver formations would return to Europe.

In January 2014, the first M1A2 system enhanced package version 2 Abrams tank arrived in Germany as part of the newly designated EAS. Just eight months after the 21st TSC prepped the final M1A1 Abrams for retrograde out of Germany, tanks carried on commercial barges returned to German soil.

The 1st BCT, 1st Cavalry Division, was replaced by the 1st Armored Brigade Combat Team, 3rd Infantry Division (1/3 ABCT). Shortly after that, the 4th Infantry Division established a forward mission command element in Germany to provide a division-level operational mission command structure for USAREUR.

The RAF allowed USAREUR to expand its Atlantic Resolve mission from two organically assigned BCTs into a division headquarters providing mission command for three BCTs and other enabling units. This successful integration of RAF in Europe transformed operations and changed the methods U.S. units use

to train internally and with multinational partners. RAF units are also no longer just aligned to Europe; they are now effectively allocated and critical to strengthening the collective defense of NATO.

Developing the EAS for RAF

To demonstrate the Army's power projection capability and to address this challenge, USAREUR began leveraging continental United States-based RAF. To support those forces, it deployed EAS equipment across Europe. As heavy armor and other equipment returned to Germany, the complexity of preparing equipment for receipt, storage, maintenance, and issue had to be conquered quickly. The 405th Army Field Support Brigade (AFSB) used facilities in Grafenwoehr, Germany, to receive and store the initial combined arms battalion (CAB) set of equipment. Planners from AMC, the Army Sustainment Command (ASC), USAREUR, the 21st TSC, and the 405th AFSB came together to expedite EAS planning efforts.

In April 2014, a rotational battalion from the 1st BCT, 1st Cavalry Division, successfully received a CAB set of tanks, infantry fighting vehicles, and other military equipment in time to participate in the multinational exercise Combined Resolve II.

Starting off as a single CAB set of equipment, the EAS quickly doubled in size and eventually expanded into a full ABCT equipment set. This rapid expansion led to a small logistics miracle. Two days prior to the scheduled return of Mannheim's Coleman Barracks to the government of Germany, the United States was granted permission to retain the location as a temporary site for EAS storage. The Coleman Worksite serves as the staging and reception point for the second and third CABs' equipment.

Moving the EAS Forward

Assuring NATO allies and deterring Russian aggression are key

components to current operations in Europe. Expanding operations outside of Germany and deeper into Eastern Europe is crucial to these efforts.

When 1/3 ABCT returned to Germany in September 2015 and drew EAS equipment ahead of its three-month RAF rotation, it drew equipment from EAS sites in

will allow units to draw equipment closer to their training areas, saving transportation time and cost while maximizing their training time with multinational partners.

Challenges to RAF and the EAS

Resetting the European theater and sustaining RAF operations in

“Russia should be considered the No. 1 threat to the United States for two reasons: its capability and its intent ... In terms of capability, Russia is the only country on earth that has the capability to destroy the United States of America.”

—Army Chief of Staff Gen. Mark A. Milley,
November 2015

Grafenwoehr and Mannheim. From there, equipment was transported by truck, rail, barge, ferry, and aircraft to multiple training areas across the Atlantic Resolve area of operations (AO). At the conclusion of 1/3 ABCT's rotation in December 2015, the unit not only returned equipment to the EAS sites in Grafenwoehr and Mannheim, but it also sent equipment to three new forward sites in Lithuania, Romania, and Bulgaria.

Planning is underway to further expand EAS sites to additional locations in the Atlantic Resolve AO this year. The sites will operate as a hub-and-spoke network in an effort to balance efficiencies and effectiveness with capabilities and capacities.

A network of linked regional logistics nodes, cooperative security locations, and forward EAS sites will support U.S. formations training across eight NATO allied countries. While the exact number and locations of enduring sites has not been finalized, the forward EAS locations

2016 and beyond present challenges that did not exist two years ago. These challenges include setting a theater, providing strategic agility to the joint force, maintaining freedom of movement during sustained high-tempo operations, and addressing new maintenance concerns associated with the new theater.

Setting the theater. The Atlantic Resolve AO encompasses former Soviet bloc nations. In many areas, road networks and infrastructure have not been touched since the collapse of the Soviet Union.

Departing installations in Germany and traveling east also means departing road networks governed by the NATO Military Load Classification (MLC) system. This system of road signs provides information to travelers about safe road weights and bridge crossing capacities.

Engineers from the 21st TSC's 18th Military Police Brigade, in coordination with USAREUR engineers and experts from the Military Surface Deployment and Distribution Command, have been conduct-



German railway loadmasters with the Theater Logistics Support Center–Europe help load an Abrams main battle tank at the railhead in Kaiserslautern. The tank was one of 22 bound for South Carolina, marking the end of U.S. Army tanks in Germany. (Photo by Staff Sgt. Alexander Burnett)

ing route assessments across eight countries over the past 18 months. These experts have been testing and classifying hundreds of bridges and thousands of miles of roadways to improve movement throughout the Atlantic Resolve AO. They are also verifying tunnel dimensions to determine clearance restrictions for transporting EAS equipment on trucks and by rail.

The Military Surface Deployment and Distribution Command and the U.S. Transportation Command are also assessing and verifying the capabilities and capacities of multiple logistics nodes across Europe. Because of USAREUR's proximity to Russia's robust anti-access/area-denial systems, planners must consider the feasibility of using ports and logistics nodes located beyond current locations. Analyz-

ing new node suitability and facilitating the establishment of political and military support agreements are fundamental to resetting the new European theater.

Providing strategic agility. An increase in tempo and dispersed operations have led to new authorized stockage list reviews, shop stock requirements, and adaptations for supply support activities (SSA). For example, the Defense Logistics Agency (DLA) began storing and managing Army-specific stocks in addition to DLA assets. AMC, in conjunction with DLA, has also established a strategic SSA at the Defense Distribution Depot Europe to support ABCT equipment operating in Europe.

Establishing new SSAs in Europe and reviewing authorized stockage lists have significantly decreased

ship times and customer wait times for many class IX (repair parts) items.

Maintaining freedom of movement. RAF rotations put more strain on vehicle fleets than combat training center rotations do. Vehicles and platforms operate in sometimes unforgiving conditions for periods exceeding two months and cover great distances between training areas.

Dedicated maintenance competes with continuous operations. Heel-to-toe rotations and split-based operations (for example, simultaneous training stateside and in Europe) require echelons-above-brigade level sustainment units to provide year-round support to an AO while the maneuver forces move into and out of the area on a rotational basis.

Forces in Europe no longer oper-

ate in the confines of training areas located throughout the former West Germany. Persistent operations occur from the Atlantic Ocean to the Russian border and throughout the Atlantic Resolve AO (from the Baltic Sea to the Black Sea). The distribution and in-transit visibility networks required to support this vast AO must continuously adapt and mature.

Convoys routinely travel distances in excess of 1,300 miles (one way) to deliver multiple classes of supply. These same convoys also cross several international borders during the course of a single mission. When transporting war materiel, diplomatic clearances are required anytime international borders are crossed, and the time lines and requirements for these clearances vary from nation to nation.

Speed matters when it comes to resupply and response to extant threats. Therefore, decreasing the time and length of the lines of supply remains a focal point for NATO planners.

Maintenance. Atlantic Resolve exercises often require maneuver units to operate in company- and troop-sized formations and disperse one unit per country across Eastern Europe. At the same time, they are typically 1,000 miles from main logistics nodes in Germany. These dispersed exercises have led to distributed logistics and maintenance operations.

Properly diagnosing equipment faults has become the primary obstacle to maintaining consistently high operational readiness rates. When a battalion or squadron is dispersed across multiple countries, it becomes important for vehicle operators and crews to properly diagnose their own equipment faults. This is because battalion maintenance officers, maintenance technicians, and specialty diagnostic kits and tools are finite.

The European Agreement concerning the International Carriage of Dangerous Goods by Road, com-

monly referred to as the ADR, governs dangerous goods transport in Europe. For U.S. military vehicles operating on European roads, this means vehicles must have proper ADR kits installed and certified before they can legally transport dangerous goods such as class III (petroleum, oils, and lubricants) and class V (ammunition).

Properly diagnosing equipment faults has become the primary obstacle to maintaining consistently high operational readiness rates. When a battalion or squadron is dispersed across multiple countries, it becomes important for vehicle operators and crews to properly diagnose their own equipment faults.

As the Atlantic Resolve AO expands and EAS equipment multiplies, so does the need to outfit and certify vehicles for ADR compliance. Members from the TACOM Life Cycle Management Command were brought into the ADR kit procurement process because the kits are nonstandard equipment. They quickly developed resourcing solutions, and many of the kits now have designated national stock numbers for ordering.

The 21st TSC's Theater Logistics Support Center-Europe also began to produce a series of ADR installation videos in order to allow unit-level maintainers to install ADR kits on their fleets. Procurement, installation and certification of kits and vehicles are ongoing, but organizations from across the Army have come together to improve fleet readiness and allow for expanded freedom of movement in Europe.

Enablers such as RAF and the EAS allow Europe-based forces to generate and sustain readiness in a region filled with uncertainty and growing complexity. In April 2016,

an EAS was issued to RAF for the fifth time. The equipment issue signals another change; RAF units will now deploy to Europe for six months instead of three.

Having RAF six-month rotations, multiple forward EAS sites conducting hub-and-spoke operations, and dispersed logistics will continue to challenge operators and

logistics planners inside and outside of Europe. These and numerous other variables are contributing to the complexity of assuring allies, deterring aggression, and resetting a new European theater.

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Robin T. Dothager is the War Reserves Branch chief for the 405th Army Field Support Brigade in Kaiserslautern, Germany. He is a former Army noncommissioned officer who held occupational specialties in both ground vehicle maintenance and supply. He is a member of the Army Civilian Corps and a multifunctional logistician specializing in Army pre-positioned stocks operations.



Engineers from the 8th Brigade Engineer Battalion, 2nd Armored Brigade Combat Team, 1st Cavalry Division, clear obstacles from the road during an exercise in the Republic of Korea on Dec. 8, 2015. The Army has replaced individual permanent change of station tours to Korea with rotational forces of combat units. (Photo by Staff Sgt. John Healy)

Korea Enduring Equipment Sets: From Theory to Practice

Eighth Army implemented Korea enduring equipment sets to save millions of dollars in transportation costs.

■ By Maj. Edward K. Woo

The chief of staff of the Army directed rotating brigade combat teams (BCTs) to the Republic of Korea (ROK) in late summer of 2014. This decision marked the end of an era as the Army replaced individual permanent change of station tours to Korea with rotational forces of trained and equipped combat units.

The new strategic direction was

implemented as the 1st BCT, 2nd Infantry Division (2nd ID), cased its colors in June 2015 and the first of the BCT-sized Korea Rotational Forces (KRFs) assumed its mission. The Army now implements KRFs similarly to how it deployed forces to Iraq and Afghanistan.

Rotating whole BCTs from the continental United States for nine months instead of deploying Soldiers

on individual tours results in formations that arrive fully trained and can remain at full combat strength for the duration of the deployment.

Determining the benefits of rotating forces requires answers to a number of basic questions. How will the Army equip the rotational force? What equipment will rotational forces bring as to-accompany-troops (TAT) equipment? Is it more cost-

efficient to transport equipment from the continental United States or to build equipment sets on the Korean peninsula? How does the Army account for a newly established equipment set?

This article answers some of these fundamental questions and illustrates how Army logistics leaders in the 19th Expeditionary Sustainment Command (19th ESC) and Eighth Army translated theory into practice.

This article can also help logisticians understand the complexities of equipment sourcing and materiel management to support rotational forces. It may serve as a guide for overcoming similar problems in other theaters of operation.

KEES Theory

Korea enduring equipment sets (KEES) are forward positioned in the ROK to support deployed rotational forces. A KEES is neither a process nor an ad hoc organization; each is a documented equipment set with supply, maintenance, and modernization management processes.

The theory of KEES is based on the model of other Army activity sets, such as theater-provided equipment sets in the U.S. Central Command area of responsibility and European activity sets. The decision to establish KEES saved the Army roughly \$3 million in second destination transportation costs per rotation.

Under the leadership of the 19th ESC and Eighth Army, the request was sent to Headquarters, Department of the Army (HQDA), to reconfigure KEES authorizations using the out-of-cycle modified table of organization and equipment (MTOE) process. The Army G-4 prioritized KEES while the 19th ESC, Eighth Army, and U.S. Army Pacific (USARPAC) codified its implementation.

Phase 1: Solve the E-MTOE

The most significant effort of equipping the rotational force was not configuring TAT equipment

but, instead, optimizing the KEES. Department of the Army Pamphlet 708-3, Cataloging of Supplies and Equipment, Army Adopted Items of Materiel, and List of Reportable Items, defines TAT equipment as “items excluded from prepositioning that accompany the deploying troops, such as individual weapons, protective masks, and so on.”

The decision to establish KEES saved the Army roughly \$3 million in second destination transportation costs per rotation.

The equipment-only MTOE (E-MTOE) was built in anticipation of KRFs. However, the authorization documents evolved because of KEES restructuring that resulted from prohibitive deployment and distribution costs.

Another reason for the E-MTOE adjustment was that KEES E-MTOEs were built using standard Army pre-positioned stock (APS) codes and business rules based on extended periods of storage, routine exercise of the equipment, and the need for continued maintenance of the equipment.

However, KEES ended up being more similar to theater-provided equipment than APS. APS business rules do not apply to the KEES because rotational units will actively exercise and maintain the equipment without interruption.

Consequently, Eighth Army and 8th Theater Sustainment Command (TSC) asset visibility and force integration experts executed a detailed line item number (LIN) analysis to create an accurate force structure for KEES authorizations. KEES evolved into sets of armored vehicles, major weapon systems, selected communications and intelligence equipment, and other items deemed critical for each mission.

To optimize KEES authorizations,

the 2nd ID and the 19th ESC, with endorsement from Eighth Army and USARPAC, requested that 155 LINs be removed from TAT and authorized on the E-MTOE. An updated KEES E-MTOE was approved and published in February 2015. The update included increased authorizations for the KEES, thus reducing the amount of TAT that units were

required to deploy with to Korea.

KEES authorizations were successfully documented with effective dates beginning in September 2015 for 13 separate unit identification codes. This critical step was the necessary spark to begin asset redistribution.

Phase 2: Identify Shortages

Once the authorizations were fixed, the next step was to fill projected shortages. Eighth Army, the 8th TSC, and the 19th ESC, with the assistance of the Army Sustainment Command, used the Decision Support Tool (DST) to create a sourcing strategy to optimize the KEES by filling gaps with excess equipment dispersed in USARPAC.

Another main source of supply to fill shortages was the 1st BCT, 2nd ID. The unit placed into KEES serviceable equipment that it no longer needed after casing its colors.

The DST course of action was successfully executed in March 2015. However, KEES still suffered from critical shortages of pacing items with an equipment readiness code of “P” (ERC-P). These shortages would have severely degraded readiness and ultimately required the assistance of outside agencies.

Phase 3: Fill Shortages

In March 2015, the Army Materiel

Command (AMC) and HQDA G-8 conducted systemic LIN reviews of critical KEES equipment shortages that the DST course of action could not source. The materiel enterprise team identified solutions to fill the remaining critical ERC-P shortages in a matter of weeks.

Mechanisms such as deploying home-station equipment, resourcing from APS, and accelerating the

KEES PBO is responsible for establishing accountability, and an Army civilian (along with eight Korean civilian employees) provides oversight until all equipment is transferred to the next unit.

The teamwork among the logistics organizations at all echelons was the catalyst to solving problems and accomplishing the mission. The operational planning teams synchronized

The benefits of codifying equipment sets for rotational units include saving millions of dollars in second destination transportation costs.

fielding of engineering equipment were solutions that swiftly solved the equipment gaps by April 2015. This support from national-level providers exhibited globally responsive sustainment at its most effective.

Phase 4: Use Relationships

AMC, HQDA, Eighth Army, US-ARPAC, the 8th TSC, and the 19th ESC supported KEES to achieve one common objective: providing an enduring equipment set to meet the intent of the chief of staff of the Army's directive to employ rotational units in Korea.

To manage KEES property, the 19th ESC established and resourced a KEES property book office (PBO) charged with maintaining 100 percent accountability of the KEES as it is signed over from one rotational force to another. The 19th ESC KEES PBO relieves the rotational unit PBO so it can concentrate on organic property.

The 19th ESC created the KEES PBO team to serve as the central hub for equipping Forces Command rotational units and providing continuity for follow-on rotations.

When a rotational unit redeploys, that unit will transfer the equipment to the next rotational unit in lieu of transferring it to the KEES PBO. The

all of the KEES equipment efforts in the ROK, set critical priorities, determined support requirements, provided a strategic picture of rotational equipping, identified potential obstacles, and assisted in the development of policy for maintaining KEES in the long term.

Phase 5: Unify Effort

Achieving unity of effort required command emphasis and senior leader involvement, so the ability to exercise mission command at the operational level was a major element of success.

Logisticians and resource managers from Eighth Army, the 2nd ID, the 19th ESC, the Army Sustainment Command, the Distribution Management Center, USARPAC, the life cycle management commands, Army G-4, program executive office and project manager agencies, and Army G-8 routinely hosted and participated in working groups and readiness reviews to monitor progress and synchronize equipping efforts.

Conducting efficient and effective equipment sourcing requires unity of effort among the various leadership levels and a seamless strategic-to-tactical interface, and the KEES effort was an excellent example of this in practice.

Phase 6: Distribute and Equip

As soon as the KEES arrived at the seaport of debarkation, the U.S. Army Materiel Support Command-Korea (USAMSC-K) and the 25th Transportation Battalion (Movement Control) provided indispensable movement control and maintenance for high-profile KEES sustainment moves.

USAMSC-K and the 25th Transportation Battalion provided port clearance, railhead operations, heavy equipment transporter support, combined movement control, route analysis, maintenance, in-transit visibility, and oversized cargo relief to deliver the KEES to its final destination.

In one instance, oversized ERC-P items in a KEES for an echelon-above-brigade engineer battalion had to be deconstructed by USAMSC-K, controlled on multimodal nodes (rail and highway) by the 25th Transportation Battalion, and reconstructed by USAMSC-K for final delivery to meet host-nation railhead guidelines.

Although major milestones have been reached by numerous layers of management and operators, the work has just begun. With the establishment of KEES, the new challenge is modernizing equipment to ensure future KRFs have the best possible equipment available. Documenting mission-essential equipment is a challenge with out-of-cycle MTOE boards that are programmed semi-annually. Tying the equipping process to the force integrators is critical for success.

Applications for the Future

The 19th ESC's enhanced readiness and presence in Korea represent an enduring and unwavering U.S. commitment to its ROK counterparts. As logisticians in Korea maintain and modernize KEES to enhance warfighting capability, they are performing an essential role in maintaining that commitment.

To do this effectively, Army logisticians must remain mentally agile and ready to respond at a moment's notice in case the Army decides to

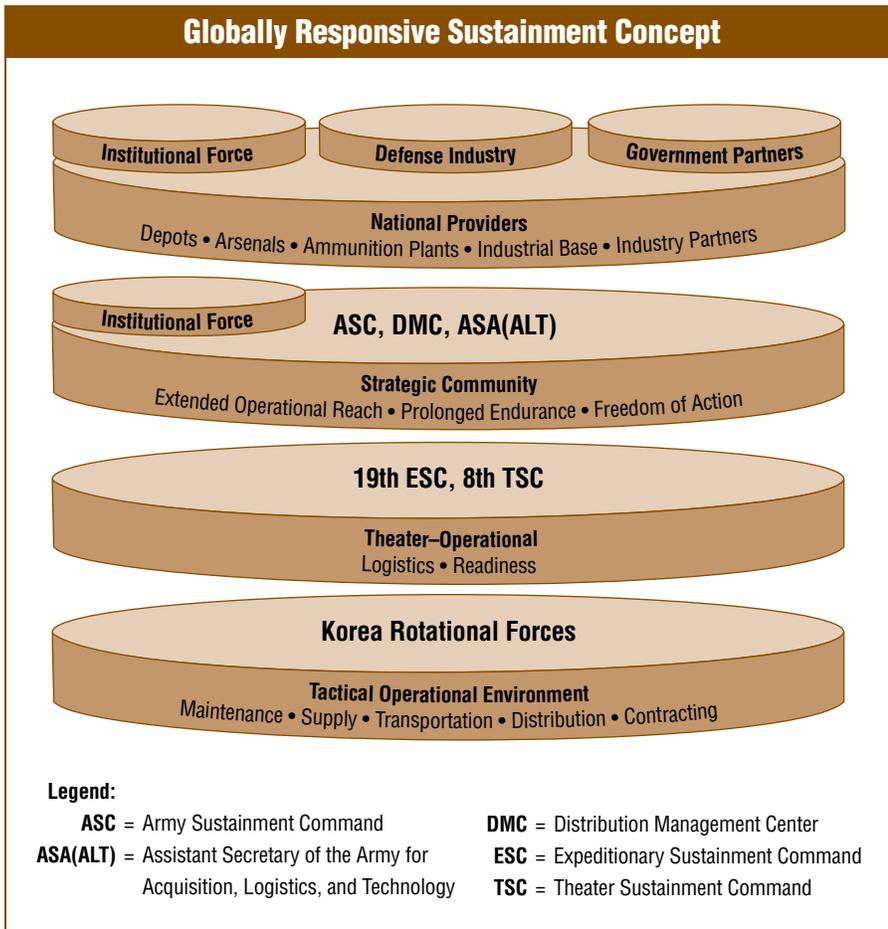


Figure 1. This chart, courtesy of the Combined Arms Support Command, shows the complexity within the factory-to-foxhole pipeline.

dispatch additional rotational forces to Korea to strengthen combat readiness.

The successful restructuring of KEES is a blueprint for the next era of Army logisticians. Using the out-of-cycle E-MTOE process, leveraging DST as the system of record to identify sourcing solutions, and partnering with each echelon in the enterprise team aided the effort to fully employ physical distribution networks and increase materiel velocity.

Mission, enemy, terrain and weather, troops and support available, time available, and civil considerations will dictate how senior logisticians at all levels provide resources to the tactical level. Army logisticians can look to general principles that have been proven to contribute immensely to the success of factory-to-foxhole efforts.

The following are recommended principles to use as guidelines when encountering a need for a theater equipment strategy:

- Bridge the tactical, operational, and strategic Army.
- Provide a voice and establish a forum for commanders and key stakeholders.
- Influence policies and establish an official change process.
- Build consensus.
- Identify and implement solutions.
- Assess and evaluate.
- Integrate efforts in pursuit of a unified logistics effort.

Globally responsive sustainment was evident in establishing the KEES in the ROK. Figure 1 shows the complexity within the factory-to-foxhole pipeline.

Critical ERC-P shortages within KEES included the Husky and Buffalo route-clearance vehicles. Using the concept diagram (from bottom to top), in order for the Forces Command rotational unit (the tactical user) to have the Huskies and Buffaloes on hand, the 19th ESC and Eighth Army leaders (the theater-operational level) identified the shortages and provided the voice for key stakeholders.

The request was sent through US-ARPAC, AMC, and the Office of the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (the strategic community) in order for the industrial base (the national providers) to accelerate the manufacturing, production, and fielding of the Huskies and Buffaloes.

By July 2015, the KEES received the Huskies and Buffaloes, and an expedited major end item supply transaction from the national level to the tactical user was complete.

The benefits of codifying equipment sets for rotational units include saving millions of dollars in second destination transportation costs. Going through this process has provided a course of action for new theaters since doctrine does not describe in detail how to begin or proceed.

These phases and principles have proven highly effective for integrating new capabilities. Most importantly, they set the conditions to provide the best equipment for our Army to fight and win our nation's wars. Through thoughtful deliberation, future theater planners can add to these phases as their own unique situations emerge.

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Staff Sgt. David Kolodziejczak draws blood from a Reserve Officers' Training Corps cadet at Madigan Army Medical Center.

The Structure, Operations, and Challenges of Army Medical Centers' Logistics Divisions

■ By Lt. Col. Douglas H. Galuszka, Chief Warrant Officer 4 Christopher T. Kelley, Sylvia A. Angelilli, and Karisa W. Kelley

Medical logisticians arguably have the most varied, specialized, and challenging duties of any logistician in the Department of Defense (DOD). As logistics is the foundation of the DOD's operational capabilities, so medical logistics (MEDLOG) is the foundation of the Army Medical Department's (AMEDD's) capabilities. Without MEDLOG there are no supplies, no functioning equipment, and no treatment facilities.

MEDLOG is more than just class VIII (medical materiel) commodity management. It is more than just equipment maintenance, facility maintenance, property accountability, optical fabrication, housekeeping, capital equipment procurement, or human resources management. MEDLOG is all of these functions, which must be executed simultaneously while following all DOD regulations and civilian industry standards.

MEDLOG is accomplished both in garrison and during deployments. The challenges that medical logisticians confront during deployments are well-documented; however, the challenges of MEDLOG in fixed facilities are not. Little training or guidance is available to prepare medical logisticians for fixed-facility operations, but the responsibilities found there immediately affect the lives of hundreds of thousands of people.

The goal of this article is to provide

an overview of the structure, duties, procedures, and challenges found in the logistics divisions of fixed-facility Army medical centers in order to assist newly assigned staff members in understanding and navigating this environment.

Fixed-Facility Manning

Medical treatment facilities (MTFs) in garrison are not manned according to a modified table of organization and equipment (MTOE) like field units are. Fixed-facility hospitals and clinics are organized instead through a table of distribution and allowances (TDA).

MTF TDAs are not set or uniform; each is structured to meet the mission requirements of the community served. The facility's leaders are allowed to request TDA changes periodically, and if justified, military and civilian personnel authorization are increased or adjusted. Managers can also hire civilian personnel as "over-hires" to meet needs—an important capability that allows MTFs to react faster to changing circumstances than TDA changes allow (since these can take several years).

Since the 1970s, the number of general schedule (GS) civilian employees have proliferated in the AMEDD. Civilians now make up two-thirds of the total workforce. They are the continuity in the facilities and the long-term change agents for improvement. However, the civilian workforce comes with its own set of challenges for leaders and managers, especially for officers and non-commissioned officers (NCOs) with no experience in or understanding of the civilian personnel system.

Army medical centers are commanded by an AMEDD colonel with three deputy commanders (also colonels) for nursing, clinical services, and administration respectively.

The logistics division falls under the deputy commander for administration. In medical centers, the chief of logistics is a Medical Service Corps medical logistics (67A70K) lieutenant colonel. (In smaller com-

munity hospitals and medical activities, the chief is usually a major.) The division is a mix of military and civilian employees with a military occupational specialty (MOS) 68J (medical supply specialist) master sergeant as the NCO-in-charge.

The logistics division structure, like that of the MTF, can vary based on the mission. For example, Madigan Army Medical Center (MAMC), located at Joint Base Lewis-McChord (JBLM) in Washington, is a 250-bed teaching medical center with 5,200 employees, including 1,600 uniformed personnel. MAMC supports 110,000 beneficiaries including active military from all of the services, family members, and military retirees.

The facility has over 2 million square feet of floor space, 51,000 pieces of equipment on the property book, and an operating budget of \$500 million per fiscal year.

To complete the logistics mission for MAMC, the Logistics Division is staffed with 115 GS employees, 145 contractors, and 29 military members.

The Logistics Division Mission

The MAMC Logistics Division's mission is to provide comprehensive logistics support to MAMC and the JBLM power-projection platform and to provide a safe and supportive environment of care for patients and staff.

Logistics support includes the following:

- The purchase, management, and distribution of medical and non-medical materiel.
- Medical equipment maintenance.
- Property management.
- The acquisition of capital investment equipment.
- Housekeeping services.
- Linen services.
- Waste disposal.

The Logistics Systems Analyst

One critical position that answers directly to the division chief is the logistics systems analyst. The individual holding this GS-12 position must

have a thorough understanding of information technology and DOD logistics processes in order to properly support the division.

The logistics systems analyst's main focus is the Defense Medical Logistics Standard Support (DMLSS) system, which has separate modules for materiel, equipment, and facility and property management.

The analyst ensures the system's updates are successful, resolves interface issues with other systems such as the General Fund Enterprise Business System, and data mines information and statistics to help managers with decision-making. As the logistics division relies more on information technology to execute its mission, the analyst's importance grows.

Logistics Division Branches

There are four branches within MAMC Logistics Division: materiel, readiness, equipment management, and environmental services. Other facilities, especially those located on bases with a basic training mission, include an optical fabrication branch.

Smaller community hospitals and medical activities also have a facilities management branch that handles all repair, maintenance, and building renovations. Supervising this enormous responsibility takes up at least half of the logistics chief's time.

The job is so significant that in all medical center facilities, management is broken out as its own separate division run by a GS-13 engineer. (The Joint MEDLOG community runs a two-week medical facilities management course at Joint Base San Antonio, Texas, as well as a recently created TDA medical logistics orientation course.)

Materiel management. A logistics division's materiel management branch is led by a GS-12 and an MOS 68J sergeant first class NCO-in-charge. It is divided into several sections that vary somewhat from installation to installation and has civilian and uniformed personnel.

Functions include acquisition, inventory management, warehous-



Maj. Veronica Damasco, a physician at Madigan Army Medical Center at Joint Base Lewis-McChord, Washington, examines Parker McPherson, who is held by his mother, Brea. The center supports active military from all of the services, family members, and military retirees. (Photo by John Liston)

ing, and receiving. At MAMC, the branch supports not only the MTF but also active duty and reserve component units in a seven-state catchment area.

Because JBLM is a power projection platform, the materiel account is funded by Defense Logistics Agency (DLA) Troop Support in Philadelphia. (Smaller MTFs are funded by the Defense Health Program.) All assets are sold to customers and the inventory is then refunded and replenished. Ultimately, DLA is the executive agent for class VIII across the Department of Defense.

Readiness. MAMC's readiness branch was developed in the last decade because JBLM needed a full-time coordinator to attend planning conferences and meetings and to manage materiel procurement, equipment maintenance, and training for the constant rotation of deploying units. This is required because the Logistics Division is designated as the Installation Medical Supply Agency (IMSA).

The branch also has the second commissioned officer slot on the logistics division's TDA. Across MTFs, company-grade administration posi-

tions have been eliminated or converted to civilian positions in the departments and divisions. So the positions that provided experience for future senior leaders no longer exist.

Some logistics divisions have retained a junior officer as the chief of materiel, but the size and complexity of MAMC's account led to the creation of a GS-12 materiel chief and accountable officer position to ensure ordering, receiving, storage, and distribution were controlled by one person.

MAMC moved the officer position to a new readiness branch so that individual could coordinate deploying unit support, coordinate with military and civilian organizations for disaster relief, and act as the deputy division chief to prepare for future assignment a division chief.

The readiness branch also conducts monthly staff assistance visits to ensure each department and clinic has its materiel ordering, property management, and equipment maintenance reviewed at least once during each fiscal year.

Equipment management. Led by a chief warrant officer 3 or 4 biomedical equipment technician and an

MOS 68A (biomedical equipment specialist) master sergeant, the equipment management branch is usually made up of three sections: medical maintenance, property management, and Capital Expense Equipment Program, Super Capital Expense Equipment Program, Medical Care Support Equipment (CEEP/Super-CEEP/MEDCASE).

Environmental services. The Environmental Services Branch (ESB) is led by a GS-12 and has no military members assigned. Made up of GS employees and contractors, the ESB handles hospital housekeeping, laundry contracts, regulated medical waste (RMW), recycling, and waste disposal.

The contracting officer's representative is the branch chief who has several government workers that inspect and provide contract quality assurance to ensure proper environmental services with the least disruption to patient care across the facility.

The ESB chief should be a certified health care environmental services professional. The deputy and quality assurance inspectors are expected to be certified executive housekeepers or registered executive housekeepers, and the staff must have completed the Transport of Biomedical Materials Course.

The ESB inspectors maintain environmental and infection control standards in the medical center and its outlying clinics. The ESB also provides customer education during orientation briefings and as needed or requested; this may include site visits to assess current practices.

The ESB, along with the medical maintenance section, has a large role in earning and maintaining the Joint Commission for Accreditation of Healthcare Organization's environment of care standards.

Materiel Management

The inventory management section of the materiel management branch is responsible for the acquisition and management of stock for the materiel account. Acquisition may be done

through a Prime Vendor program distributor, the Electronic Catalog (a DLA acquisition module), local purchase, or credit card. In some locations, many military-unique items are available from a troop support depot.

The acquisition process requires detailed knowledge of contractual requirements and limitations, standardized product groups, and clinically acceptable substitutes.

Contractual requirements. DLA Troop Support manages both the pharmaceutical and medical surgical (MEDSURG) Prime Vendor contracts. Both contracts have a primary and backup vendor, but the backup can only be used after the primary vendor cancels. And, in most cases, the lead time from the backup vendor is lengthy.

Prime Vendor contracts enable the IMSA to acquire products directly when the vendor has a distribution and pricing agreement (DAPA) with DLA Troop Support. When a DAPA is established, it is the IMSA's responsibility to request that a Prime Vendor ordering number be assigned to the product. The vendor will establish the number from their catalog, and once it is loaded in the Medical Master Catalog, it will download into DMLSS and the product can be sourced correctly.

This concept seems rather easy to adopt, but it is fraught with limitations. If a MEDSURG item has a DAPA, it does not necessarily mean that the vendor has to make it available for purchase. If the DAPA holder does not work with the primary vendor, the vendor is not obligated to assign it a catalog number or distribute the product.

If the vendor has a relationship with the DAPA holder, it is required to stock items that the IMSA properly forecasts and designates as "usage." The IMSA is responsible for properly forecasting usage given to the vendor. If it provides the vendor a faulty forecast, it may have to buy the vendor's excess or dead stock.

Contract limitations. All other

items are considered nonusage items; the vendor does not stock those items and must get them shipped from the manufacturer. The primary vendor does not have to support nonusage items at all, and if the item is not stocked locally, the lead time can be between two and six weeks.

The limitations of the Prime Vendor program are problematic; Army Medical Command (MEDCOM) metrics directly conflict with the verbiage of the Prime Vendor contracts. MEDCOM units are required to significantly reduce local purchases and credit card use, but obtaining DAPAs has become more difficult because of import restrictions and the lack of support and long lead times for nonusage items.

Standardized product groups. Standardizing product groups is intended to reduce variability in a product line. The MTF has a standardization committee, the region has a DOD Medical Materiel Enterprise Standardization Office, and the Office of the Assistant Secretary of Defense for Health Affairs has oversight. The hope was that with committed sales volume from all DOD facilities, spending for MEDSURG supplies would significantly decrease.

Although there has been some cost avoidance, a lot of frustration has been experienced in selecting manufacturers of product groups. In many cases, the supplies that have been standardized cannot be converted across the board because of product shortages, clinically unacceptable product selections, supplies that cannot be used in conjunction with particular equipment, or the expense of the products.

MTFs are encouraged to volunteer to test product groups, but it is very difficult to have one product line meet everyone's needs. Converting product groups requires working with the prime vendor to obtain samples for clinical requirements testing, coordinate training, and deplete or sell old stock.

Credit card use. Attempting to support patient care and MTOE units

without increasing credit cards and local purchase use is not possible. That is why MAMC's inventory management section is creating a consolidated section for credit card purchases.

The section will have medical and nonmedical item managers that will use credit cards to buy items as necessary for the departments and divisions. This will reduce the overall number of credit cards that need to be reconciled each month from 187 to approximately 50.

Warehousing and Distributing

The warehousing and receiving sections may be combined or separated into two entities. In addition to stocking 1,900 lines of medical supplies, warehousing responsibilities may also encompass shipping, management, and maintenance of medical gas cylinders, a vault for medications and pilferable items, temperature sensitive vaccines, and contingency operations items, including medical chemical defense materiel. Warehousing responsibilities also include quality control and maintaining and distributing supplies to the MTF and outlying clinics.

Customer support personnel must work closely with clinicians to convert to standardized product groups and find substitutions for critical items. They must also coordinate customer support of manually scanned supply areas (medical supply shelves that need to be scanned in order to notify the materiel branch when stock is depleted), point-of-use system maintenance, and customer area inventory management within the DMLSS Customer Assistance Module.

The DMLSS Customer Assistance Module may support external customers, but it does not support large quantities well through the Prime Vendor process because of contracting constraints. The manual process can be just as problematic when MTOE units provide incorrect units of issue and incorrect or defunct national stock numbers and when customer requests have short suspenses.

Researching external customer re-

quests is extremely time-consuming. It is critical that customer assistance personnel and inventory managers have a good basis of clinical knowledge in order to correctly interpret customer requirements.

Medical Equipment Maintenance

The medical maintenance section is responsible for maintaining 14,000

organization for Standards (ISO) 9000 quality management certification.

Property Management

The property management section is led by a GS-11 property book officer (PBO) who manages property for the hospital, dental activity, veterinary activity and other supported satellite facilities. The mission of the

visions assigned to them for oversight.

Equipment managers, through progressive levels of logistics training and experience, serve as subject matter experts in their fields. They stay abreast of current regulatory guidance and apply their technical skills in order to provide customer service.

CEEP/SuperCEEP/MEDCASE

The SuperCEEP and MEDCASE programs are centrally funded and provide the large dollar investment in capital equipment required for MTFs throughout the world. The CEEP/SuperCEEP/MEDCASE section, in coordination with the hospital staff, develops the hospital's short-, mid-, and long-term equipment acquisition plans and is responsible for the purchase and acquisition of all equipment except office and medical supplies. The section is led by a GS-9.

The three program categories are defined by the dollar amount to be spent. CEEP encompasses equipment with a unit cost of less than \$100,000 purchased with Defense Operation and Maintenance funds. These funds are allocated by the hospital commander and the resource management division.

SuperCEEP is equipment costing between \$100,000 and \$250,000 per unit and is purchased with Defense Health Program and Operations and Maintenance funds. MEDCASE equipment has a unit cost of \$250,000 or more and is purchased through Defense Health Program and Operations and Maintenance funds.

Medical device requirements originate at the activity level or through a local command-approved technology assessment and requirements analysis. The proponent and funding source for the MEDCASE and Super CEEP programs is MEDCOM.

Housekeeping Services

The MAMC housekeeping contract is a \$12 million contract that provides 140 housekeepers. The housekeepers are trained to follow national health care and environmental cleaning

Medical logisticians must oversee complex operations and lay the foundations for health care, enabling skilled providers to deliver the highest quality services possible.

pieces of high-maintenance medical equipment in MAMC. Biomedical equipment specialists install, maintain, calibrate, and repair medical equipment used for patient care at the MTF. They also maintain equipment for a number of outlying health, dental, and vet clinics, military entry processing stations, and deployable units on an as-needed basis across a multistate area.

Some maintenance is done by in-house technicians, but for more sophisticated equipment, the section partners with the manufacturer or contractor technicians. The military biomedical equipment specialist is a graduate of the Joint Biomedical Maintenance School, and civilian technicians have degrees in biomedical technology or engineering.

Technicians can obtain certifications that demonstrate their competencies and experience. These certifications include certified biomedical equipment technician, certified laboratory equipment specialist, and certified radiology equipment specialist.

Another significant accomplishment that has built trust with the MAMC medical maintenance section's customer base is that the section is the first MTF maintenance section in the DOD to earn the International Or-

ganization for Standards (ISO) 9000 quality management certification. The section is to maintain 100-percent property book accountability for all 51,000 nonexpendable, durable, and expendable but reportable pieces of equipment on 246 separate hand receipts. Being a TDA medical facility, MAMC has flexibility on the types or amount of equipment it is allowed; that is decided by the local mission and the providers.

The section is responsible for hand receipts, transfers, turn-ins, equipment disposal, and equipment acquisition functions such as forecasting and budgeting for equipment requirements and purchases. It maintains accurate property accountability records using a module in DMLSS.

The property management section also receives and establishes accountability for all purchased, transferred, leased, or rented equipment (including temporary loans and displays), provides nonmedical supplies for health care and administrative activities, maintains equipment in storage, maintains document control registers, and ensures that appropriate action is taken to account for lost, damaged, destroyed, or stolen property.

Important to effective property accountability are equipment managers who serve as direct liaisons to customers. Each equipment manager has a set number of departments and di-

standards and guidelines set by the Association of PeriOperative Nurses and the Association for the Healthcare Environment.

Quality assurance inspectors have a randomly generated daily inspection schedule that takes them across the hospital and outlying clinics each day and on different shifts. They assess performance standards laid out in the contract. These standards are broken into six types:

- Services provided to operating, scrub and preparation, labor and delivery, and postpartum rooms.
- Services provided in critical care areas like the emergency room and neonatal intensive care unit.
- Services provided to patient rooms, isolation rooms, dining facilities, and public restrooms.
- Services provided to clinics, laboratories, veterinary facilities, dental facilities, pharmacies, and therapy areas.
- Service provided to administrative areas, storage rooms, and reception areas.
- Services provided to corridors, ramps, footpaths, lobbies, and elevators.

Each type of service is tied to a different payment for the contractor.

Linen Services

MAMC maintains 244 separate types of linen and has 160,000 pieces, including sheets, scrubs, lab coats, towels, and other items on hand. The laundry contract is worth \$1.3 million and handles two million pounds of linen a year. Housekeepers collect dirty linen and ensure fresh linen is distributed to the wards and clinics.

The contractor picks up dirty linen and delivers clean linen five days a week. The ESB also has an in-house seamstress who repairs and alters linens and an issue desk where duty-white uniforms and personalized lab coats are issued after cleaning.

Regulated Medical Waste

A yearly \$100,000 contract han-

dles 136,000 pounds of RMW that is collected in designated points across the facility and brought to the loading dock by housekeeping. Four categories of RMW are picked up by the contractor three times a week: sharps, red bag waste, chemotherapy trace waste, and pathological waste.

Staff knowledge and awareness, storage and space, and proper handling are important because there are federal, state, and local laws that govern RMW management. The ESB provides education and training to hospital personnel to ensure overall understanding for managing RMW.

Waste Disposal

An MTF can produce enormous quantities of recyclable materials. Recyclables are collected in bins in the hallways, wards, and clinics in small containers and in larger industrial bins for areas that collect large quantities such as the dining facility. Recyclables are transported to the loading dock by the housekeepers and picked up twice a week by the contractor.

Non-recyclable trash is also collected by housekeepers and brought down to the loading dock. Almost 2,000 tons of trash is collected each month. It is compacted and picked up for disposal by the contractor three times a week. Over the last decade, MAMC has made progress in reducing waste and finding new items and ways to recycle.

Clearly, MEDLOG management is a unique area of Army logistics. Medical logisticians must oversee complex operations and lay the foundations for health care, enabling skilled providers to deliver the highest quality services possible. Junior officers and NCOs must be prepared through training and developmental jobs to take on future rolls as division chiefs and NCOs-in-charge in MTFs.

MTFs are not only critical in ensuring a deployable force and care for our families and retirees, but they are also centers of education for our surgeons, nurses, radiologists, and technicians as they hone their skills and

prepare for possible deployments.

Without the education, experience, and dedication of medical logisticians across a wide range of specialties, Army medicine cannot make the contributions that it does both in garrison and on the battlefield.

Lt. Col. Douglas H. Galuszka is the chief of the Logistics Division at Madigan Army Medical Center (MAMC) at Joint Base Lewis-McChord, Washington. He holds a bachelor's degree in history from Michigan State University, a master's degree in public administration from the University of Maryland, a master of health administration degree from Baylor University, and master's degrees in military history and theater operations from the Army Command and General Staff College. He is an American College of Healthcare Executives fellow and a graduate of the Combined Logistics Officer Advanced Course and the School of Advanced Military Studies.

Chief Warrant Officer 4 Christopher T. Kelley is the former chief of MAMC's Equipment Management Branch. He holds a bachelor's degree in social science from Colorado State University, an MBA in health care management from the University of Phoenix, and a master's degree in project management from Walden University. He is a certified biomedical equipment technician, certified radiology equipment specialist, and a certified materials and resource professional.

Sylvia A. Angelilli is the chief of the Materiel Management Branch at MAMC. She has a bachelor's degree in finance from the University of Maryland and is a member of the Order of Military Medical Merit.

Karisa W. Kelley is the Environmental Services Branch chief at MAMC. She holds a bachelor's degree in chemistry from Cameron University and a master's degree in environmental management and policy from the University of Denver.



Soldiers from the 348th Quartermaster Company work with a Navy engineer to connect a hose line to a pump during the Combined Joint Logistics Over-the-Shore 2015 exercise in the Republic of Korea. (Photo by Maj. John Jacques)

Tactical Interface on the Shore

■ By Maj. John F. Jacques

Militaries throughout history have sought to project power by deploying troops and equipment across bodies of water either to mount an invasion or to reinforce units already deployed forward. As military and support equipment became larger and forward forces required more resources to advance and occupy objective territory, the capabilities for loading and unloading ships and putting materiel ashore increased.

Modern capabilities to sustain operations by putting materiel ashore were exercised during the Combined Joint Logistics Over-the-Shore 2015 (CJLOTS 15) exercise in the Republic

of Korea (ROK). Although planning and preparation started much earlier, CJLOTS 15 began on June 29, 2015.

The exercise was conducted at Anmyeon Beach on the ROK's west coast and included forces from the Army, Navy, Marine Corps, and Coast Guard and the ROK Army, Navy, Marine Corps, and Air Force.

The participating units established logistics support areas just off the beach and at the ROK's Seosan Air Base. ROK marines secured the beach, and the Coast Guard secured the offshore areas. Using a 1,800-foot Trident pier, U.S. Navy and ROK civilian strategic sealift personnel transported and offloaded

equipment, fuel, and water during the exercise.

CJLOTS 15 provided valuable feedback and a proof of concept demonstration for the deployable systems required to operate in varied terrain and adverse environmental conditions. It was also an opportunity for sustainment Soldiers from across the Korean peninsula to participate and conduct hands-on training with a unique equipment set during a nonstandard mission.

Assets and Personnel

The shoreline is the interface where strategic assets meet operational units and where resources are then

funneled down for tactical distribution. Operational assets employed during CJLOTS 15 included a Trident pier to download equipment from strategic sealift, 50,000-gallon bags to store water pumped in from the *USNS Wheeler* in preparation for distribution, and command and staff elements from the 7th Transportation Brigade (Expeditionary) and 10th Transportation Battalion.

Soldiers from the 348th Quartermaster Company, 194th Combat Sustainment Support Battalion (CSSB), provided operational support equipment and executed the strategic-to-operational and operational-to-tactical interfaces. Additional capabilities, such as back-up solutions for unique problem sets and equipment compatibility problems, were provided by local nationals and common-use parts from the Korean economy.

A joint task force consisting of the Navy's Expeditionary Strike Group-3 and the 7th Transportation Brigade staffs included members from all supporting military branches. The base staff consisted of Army personnel, and senior planners from the Navy, Marine Corps, and Coast Guard held primary and critical positions among the staff, which was led by a Coast Guard rear admiral and Marine Corps colonel. An Army colonel had command of functional sustainment.

Navy subject matter experts were well-integrated into sustainment operations to provide required assessment and oversight for the interface between offshore petroleum distribution system operations and the Coast Guard.

Operations

The 551st Inland Cargo Transfer Company (ICTC), 498th CSSB, had the capabilities on its modified table of organization and equipment for managing the requirements for theater opening and reception, staging, and onward movement operations as directed by the 19th Expeditionary Sustainment Command.

Once supplies and assets were moved ashore, the ICTC provided rough-terrain container handlers, rough-terrain forklifts, and other transportation assets to move materiel from the shoreline to inland staging areas. Materiel and equipment sorted within the marshaling yard near the shoreline was then prepared for local haul to unit assembly areas as required.

Platoon-sized detachments from the 194th CSSB were organized to complement the ICTC's organic equipment. They provided personnel with the appropriate skill sets for operational bulk liquids storage (for fuel and water) as well as tactical distribution equipment.

A layered support plan can be critical to the success of such a complex operation. Planners must ensure multiple assets are available to provide backup support as requirements change or unforeseen shortfalls are created by environmental factors.

For example, original plans to anchor the Trident pier to the beach called for the use of two winch-equipped D7 bulldozers. Because these assets could not be employed, the integrated plans sections for both the 7th Transportation Brigade and the 498th CSSB quickly provided backup support by positioning two M88A1 Hercules recovery vehicles on the beach for use as pier anchors.

Cooperation

The success of this operation required extensive cooperation between units, different branches of service, and U.S. and ROK forces. The Army provided most of the operational manpower, and other services provided integrated mission command elements and support operations.

Sailors from the Navy held critical positions in the operations sections and on the support staff for logistics, engineer, and intelligence functions. The Coast Guard fulfilled the harbormaster function, providing critical assessment and guidance concerning the tidal schedule and weather effects. Operational support was augmented by medical and food service

personnel from the Army, Coast Guard, and Navy.

The employment of equipment compatible with the ROK army provided enhanced interoperability. The Korean cargo ship was able to interface with the Trident pier and use it to download equipment, and common bulk liquids storage and distribution equipment ensured mutual support capability. ROK leaders operated alongside the U.S. joint command post, making CJLOTS a truly combined operation.

The benefits of this task organization were many and included enhanced engineer support during the construction phase. For example, ROK marines used bulldozers and grading equipment to prepare staging areas and improve pathways from the pier to the marshaling area and handled site preparation for the large logistics support areas that were built for participating forces.

Staff functions were also enhanced by integrating lines of communication management and intelligence functions with offshore combined security responsibilities executed by ROK naval elements and the Coast Guard.

The continual requirement for the Army to deploy equipment into austere environments makes exercises such as CJLOTS important to rehearsing and refining the Army's approach to expeditionary operations. With the range of equipment currently available, adaptable leaders, and the incredible capabilities demonstrated during CJLOTS 15, it is possible to overcome the challenges caused by terrain and inclement weather to meet the needs of tactical units.

Maj. John F. Jacques is the brigade executive officer for the 595th Transportation Brigade. He holds a bachelor's degree in human services from Hawaii Pacific University and a master's degree in leadership from Grand Canyon University. He is a graduate of the Transportation Officer Basic Course and the Combined Logistics Captains Career Course.



A transportation management coordinator Soldier from the 665th Movement Control Team makes adjustments to a Portable Deployment Kit interrogator installed on his crew's humvee. The interrogator is used to provide in-transit visibility of radio frequency identification tags attached to a convoy's vehicles and equipment. (Photo by 1st Lt. Carlos Moreno)

Exercising Reception, Staging, and Onward Movement in Korea

A combined Republic of Korea and U.S. reception, staging, and onward movement exercise showcased tactical-level combined movement control.

■ By Capt. Matthew Vogele

In the summer of 2015, the 19th Expeditionary Sustainment Command (ESC) partnered with the Republic of Korea (ROK) Army's 2nd Operational Command (2OC) for a combined exercise. The exercise focused on validating the units' ability to perform intratheater reception, staging, and onward movement (RSO), which is a key task in providing continuous for-

ward support to U.S. Forces Korea during contingencies in the Korean theater of operations (KTO).

Integral to the task of RSO in a combined theater is the function of movement control, which was executed by the ESC's support operations mobility section, the U.S. Army Materiel Support Command—Korea, the 25th Transportation Battalion (Movement Control), and

the allied or host-nation movement control structure.

Intratheater RSO

Elements of the 498th Combat Sustainment Support Battalion, the 94th Military Police Battalion, and ROK Army military police from the 2OC conducted a combined convoy operation that simulated intratheater RSO between the Busan Storage

Center and Camp Casey.

Intratheater RSO is the movement of personnel, equipment, vehicles, and materiel within and throughout a theater distribution network. Intratheater RSO is doctrinally different from intertheater RSO, which is the strategic deployment or redeployment of forces into or out of a theater of operation.

A unit deploying into a theater of operation transports most of its equipment aboard a maritime vessel. Upon arrival, the equipment is discharged from the vessel and prepared for additional movement by road or railway.

For the combined exercise, containers and equipment were loaded onto vehicles at the Port of Busan and transported 350 miles north to their destination at Camp Casey, located just 15 miles from the Demilitarized Zone.

The KTO offers a unique and invaluable opportunity for the 19th ESC to exercise combined movement control functions with an allied host nation to determine best practices for intratheater RSO.

South Korea is roughly the size of Indiana and has a population of more than 51 million people. Population density, congestion, and mountainous terrain, which covers 70 percent of the country, are some of the greatest challenges for combined and joint sustainment support.

Route Synchronization

Army Techniques Publication 4-16, Movement Control, replaced Field Manual 4-01.30, Movement Control, as part of the Army's Doctrine 2015 initiative. One important change was the replacement of the term "highway regulation" with "route synchronization." This change emphasizes the importance of executing a commander's movement priorities at all levels of theater movement control.

Combined route synchronization at the tactical level is executed by a movement control team (MCT) and was one of the key tasks validated

during the exercise.

A movement control battalion (MCB) has four MCTs and one headquarters and headquarters detachment. Each MCT has four crews that consist of at least two military occupational specialty 88N (transportation management coordinator) Soldiers and one noncommissioned officer. All crews are grouped in pairs to form sections, which are led by a section sergeant and platoon leader.

Each crew is assigned one M1151 humvee with a Movement Tracking

sustainment movements.

Route synchronization played a vital role during the exercise in assisting each convoy to successfully reach its destination at Camp Casey. The exercise validated the 19th ESC's ability to perform combined theater movement control and intratheater RSO.

Combined Movement Control

In a theater distribution network, an MCB is the principle organization under a sustainment brigade or

Critical information requirements are used to accurately communicate the status and array of forces to the geographic combatant commander.

System and Portable Deployment Kit. Crews from the 138th, 517th, 662nd, and 665th MCTs occupied four convoy support centers and three checkpoints along the 350-mile route during the exercise.

The placement of MCT crews at convoy support centers or other checkpoints serves three key movement control and route synchronization functions. First, the MCT executes the theater movement plan as dictated and approved by the ESC and combined theater movement control elements. Each crew validates convoy schedules to ensure priority movements are given precedence along main supply routes or alternate supply routes.

Second, the MCT crew controls routing. The crew can halt, delay, or divert movements if a node's status changes, if a route is congested, or if a shipment is needed elsewhere.

Third, the crew performs in-transit visibility. The crew reports a convoy serial's arrival and departure times to theater movement planners and uses the Movement Tracking System and the Portable Deployment Kit to track convoys and high-profile sus-

ESC that is responsible for executing a theater movement plan.

In other words, the MCB manages and supervises the movement of equipment, units, and materiel throughout a battle space. This task becomes even more challenging in a combined environment and may require movement coordination with not only a host nation but also allied forces.

The 2OC's 32nd MCB is the ROK Army force equivalent of the 25th Transportation Battalion, which is the 19th ESC's MCB. The structure and mission of ROK Army MCBs parallel those of U.S. Army MCBs. Both comprise MCTs and are responsible for providing area movement control to a designated field army.

During armistice and contingency operations in the KTO, MCTs from the 25th Transportation Battalion co-locate with ROK Army MCTs to form combined movement control teams (CMCTs) and combined movement control centers (CMCCs).

CMCTs provide area support to divisional units and coordinate



A convoy of vehicles from the 498th Combat Sustainment Support Battalion, 94th Military Police Battalion, and military police from Korea's 2nd Operational Command halt at a convoy support center. (Photo by 1st Lt. Carlos Moreno)

with CMCCs at the field army level. CMCCs assist in the allocation of available lift assets, coordinate with adjacent ROK Army CMCCs to regulate movements, and report to movement control elements at the ESC and U.S.-ROK Combined Forces Command levels.

There are three ROK field armies and one ROK capital defense command, and each is assigned an ROK Army MCB. Other movement control elements that are involved in the combined and joint structure but did not participate in the RSO exercise include a combined air mobility division, combined seaport command center, joint movement control center, and combined transportation movement cell.

These combined movement control elements consist of both U.S. Army and ROK Army personnel and fall under the ROK Transportation Command. Each ROK Army

MCB (the 31st, 32nd, 33rd, and 35th MCBs) also falls directly under the ROK Transportation Command.

This combined and joint structure is the foundation of continual forward support during RSO. The integration of these movement control elements provided the ESC commander with visibility of deploying personnel and their equipment. Critical information requirements were used to accurately communicate the status and array of forces to the geographic combatant commander.

During the exercise, the 665th MCT, stationed at Camp Carroll, co-located with elements of 32nd MCB in Daegu to establish a CMCC. The CMCC acted as a conduit between the ROK Army and the 19th ESC for combined movement control.

Other key planning considerations included allocating and staging ve-

hicles at the Busan Storage Center, determining the location of convoy support centers, gaining convoy highway clearance request approval from the ROK Transportation Command, establishing and following combined ROK-U.S. military police escort procedures, and determining the field location of the transportation movement control element.

The exercise was a proof of concept for the ESC's ability to provide RSO support in a combined environment for rotational forces deploying to the KTO.

Capt. Matthew Vogle is the commander of B Company, 82nd Brigade Support Battalion, 3rd Brigade Combat Team, 82nd Airborne Division, at Fort Bragg, North Carolina. He holds a master's degree in transportation and logistics management from the American Military University.



Staff Sgt. Christopher McKinnon, a supply sergeant with the 440th Army Band, North Carolina Army National Guard, conducts logistics operations in Global Combat Support System–Army on May 29, 2015. The band was among the first National Guard units to train on the system. (Photo by Sgt. 1st Class Craig Norton)

Lean Six Sigma Team Improves the Turn-In Process for Global Combat Support System–Army

■ By Capt. Michael S. Smith

The leaders of the 3rd Combat Aviation Brigade (3rd CAB), 3rd Infantry Division, sponsored a project that used Lean Six Sigma (LSS) methods to define, measure, analyze, improve, and control issues related to Global Combat Support System–Army (GCSS–Army) turn-ins conducted through systems received during the

Wave 1 fielding. The project team used LSS to systematically address defects in the GCSS–Army supply support activity (SSA) turn-in process that had resulted in a loss of \$1,201,620 in fiscal year 2015.

Through the analysis, the LSS project team discovered that turn-in process errors created by Forces Command (FORSCOM) units re-

sulted in an avoidable loss of at least \$9,686,619 during fiscal year 2015. Such errors make it appear as though units are not eligible to be reimbursed for turned-in items when, in fact, they are.

If lost credit within FORSCOM was treated in the same way as lost property, then 16 brigade-level turn-ins would trigger a general officer-

level financial liability investigation of property loss because the loss would exceed \$100,000. In addition, 253 brigade-level investigations would be triggered from errors that cost units between \$5,000 and \$100,000.

Missing Logic

When GCSS–Army replaced the Standard Army Retail Supply System (SARSS) and the Funds Control Module (FCM), it did not retain the programming logic for turn-ins. Chapter 13 of the Defense Finance and Account Service–Indianapolis (DFAS–IN) Regulation 37-1, Finance and Accounting, says the FCM “includes a tracking system for matching customer returns against serviceable issues of like items and vice versa.”

According to DFAS–IN Regulation 37-1, GCSS–Army instead automatically generates a turn-in transaction whenever a recoverable item is issued to a unit Department of Defense activity address code. It states, “In order to qualify for credit, the unit must use this transaction to return a matching item within (180) days from issue.”

Because the tracking system provided by the FCM was replaced with a manual matching requirement, junior enlisted Soldiers became responsible for ensuring that their units retained millions of dollars in their operations and maintenance accounts.

The turn-in tracking problem resulted in a Department of the Army accounting issue and not actual property loss because expected turn-in credit was never distributed from the Army Working Capital Fund (AWCF), which operational units cannot access.

Incorrectly processed turn-ins affect a unit’s ability to sustain its readiness because errors result in delayed or missed credit payments. Arbitration claims for incorrectly processed returns must be submitted through the Enterprise Material Discrepancy Challenge System Enterprise Recoverable Items Management process.

Many claims are denied by life cycle management commands because they lack sufficient manpower to fix mistakes made at the unit level. In one case, the 3rd CAB lost \$368,000 in credit after a private first class matched an Apache engine turn-in to a document number that was ineligible for credit instead of creating a request for credit. The 3rd CAB’s arbitration claim to correct the error was denied by an Army Materiel Command representative.

A Time-Consuming Process

The process of identifying the automatically generated turn-in transaction, referenced in DFAS–IN Regulation 37-1 and known as a purchase request (PR) document number in GCSS–Army, can be complicated if the user does not know how the system works. SSA clerks must be able to identify and record all interchangeable and substitutable national item identification numbers (NIINs) to the part being turned in because a PR may have been generated to replace a legacy part.

For example, an SSA clerk processing an engine fuel control component from a general support aviation battalion would record 13 related NIINs. Then he would search for the 13 NIINs in the GCSS–Army turn-in transaction code “ZOBUX” to identify the oldest match for an engine component.

Once the clerk identified the oldest available match, he would establish a turn-in match that triggered a credit payment for the battalion. It is imperative that clerks locate the oldest match quickly because credit is not authorized for turn-ins that occur 180 days after an issue.

Unexpected Returns

If a match is not found, the SSA clerk must generate a PR document number to process what is known as an “unexpected return.” In some SSAs, enterprising turn-in clerks realized that, instead of searching for a match, they could expedite operations by processing every turn-in

as an unexpected return. A second-order effect of this workaround was that SSA clerks accepted the default turn-in advice code of 1W (item is excess).

DFAS–IN Regulation 37-1 states that excess turn-ins are not eligible for credit, so the fastest processing method can affect a unit’s training budget. During fiscal year 2015, the 1st Armored Brigade Combat Team, 3rd Infantry Division, lost \$583,017 because of improperly expedited turn-ins. Regardless of credit value, the workaround wasted line battalion personnel’s time because the recoverable item report did not reflect a turn-in.

According to 3rd Infantry Division standard operating procedure (SOP), technical supply personnel must locate a record of their turn-in and get their company commander to sign a memorandum in order to have an entry manually deleted from the recoverable item report.

Improper Credit

Always requesting credit is not a valid course of action either. DFAS–IN Regulation 37-1 states that “credit paid that is equal to or greater than \$500 for identified turn-ins that exceeds one-for-one criteria will be subject to reversal.”

Keeping this in mind, credit payments that exceed the one-for-one criteria are defined as “improper.” Improper credit payments are similar to overpaid federal tax refunds. Just like the Internal Revenue Service, the Army expects its overpayments to be refunded promptly.

FORSCOM Resource Management Message 150111 says that if credit reversals cause a unit to overspend, leaders are subject to criminal and administrative penalties under the Anti-Deficiency Act.

No improper credit payments triggered in GCSS–Army were reversed in fiscal year 2015. Because there is no guarantee that improper payments will not be reversed in the future, commanders should implement control measures to min-

imize the risk of Anti-Deficiency Act violations.

LSS Study of Improper Credit

The initial goal of the LSS project was to reduce the use of wrong turn-in advice codes by 50 percent and decrease the improper credit dollar value by 50 percent, which would result in more accurate status of funds reviews by July 15, 2015.

During initial analysis, the project team determined that 54 percent of the brigade's turn-ins for credit were defective, which resulted in the brigade receiving \$2,058,483 in improper credit. As a result, the 3rd CAB's status of funds report did not account for 11.45 percent of its actual liabilities.

After examining turn-in records, the LSS team concluded that SSA clerks were passing along errors generated by line battalions. The project team interviewed the supply personnel from the 3rd CAB's five line battalions (ground and aviation) to determine each shop's SOP.

The technical supply officer for the battalion with the least number of defects stated that he established a workaround where they held onto an unserviceable part until a replacement had been received at the SSA. While this may seem like a valid workaround, this policy violated Army Regulation 710-2, Supply Policy Below the National Level, which states line battalions have 10 days to return unserviceable recoverable items to the SSA.

Interviews with other line battalions identified that many clerks and maintenance technicians did not know when to apply the 1W turn-in advice code. In addition, technical supply officers were not receiving the GCSS-Army ZOAREP report, which lists materiel due for turn-in to the SSA. The ZOAREP report is similar to the legacy overage repairable items list report. Lacking the information for verification, clerks requested credit for every turn-in.

The project team identified a dearth of quality control measures at

the SSA. SSA clerks were not trained to spend additional time checking to see if units had a recoverable part on order. They lacked the information needed to determine whether a line battalion required credit, and the SOP did not require clerks to ask if line battalions received a matching issue at another SSA.

The following were determined to

During initial analysis, the project team determined that 54 percent of the brigade's turn-ins for credit were defective, which resulted in the brigade receiving \$2,058,483 in improper credit.

be the root causes of turn-in failure:

- Line battalions were not trained to use GCSS-Army.
- The SSA and line battalions lacked SOPs relevant to GCSS-Army.
- Quality control was insufficient with respect to turn-in advice codes.

The root causes of turn-in error were all traced back to a lack of technical knowledge.

Improving SOPs and Quality

The project team's goal was to develop an error-proof method that SSA clerks could use to process matches more accurately and ensure compliance with DFAS-IN Regulation 37-1, which states that "units will be required to submit a replenishment requisition for each item that is returned using the manual process and must also be able to provide documentation of these transactions upon request."

The LSS project team considered assigning an officer or civilian contractor to monitor turn-ins to provide a quality control element. However, that option was eliminated because the position would not be included

in the modified table of organization and equipment and it did not address the root cause of errors.

Finding a match. Project team members and aviation maintenance technicians Chief Warrant Officer 2 Diane Washburn and Chief Warrant Officer 3 Christopher Blanchard, felt that their units should be responsible for identifying a match and claiming

training funds instead of SSA clerks who might not even be in their brigade.

The project's SSA subject matter experts, Pfc. Lorin Moss and Chief Warrant Officer 2 Sonia Sanders, thought it wise to shift the responsibility toward line battalions because SSA clerks are often unfamiliar with the specialized nature of high-value aviation parts that are regularly turned in.

A new tool for turn-in. The "eureka moment" struck when Moss stated that processing turn-ins would be a lot easier if he were provided a receipt. Initially, the LSS team considered adding a stamp to the turn-in request form or writing information in its comments section. But after the team studied all of the variables that affected how a turn-in was processed, it instead decided to use the supplemental turn-in form to improve and standardize the process. (See figure 1 on page 60.)

The check boxes on the form alert SSA clerks to the pertinent ZOBUX transaction guides, while the blanks provide the data required to complete the transaction and ensure auditability. A maintenance supervisor must sign the supplemental turn-in form in order to establish

Wave 1 Supplemental Turn-in Form

Return Document Number <small>From ULLS-A or SAMS-E D6Z</small>		Supersession Chain (I&S Family) <small>Identify using PIC03 or FEDLOG</small>	PR Net Days
Return Material Number (NIIN) <small>From ULLS-A or SAMS-E D6Z</small>			
Return Quantity <small>From ULLS-A or SAMS-E D6Z</small>			
Unit SLOC <small>Storage Location corresponding to the DODAAC of the return document number</small>			
Type of Turn-in <small>Initial the appropriate box A funded requisition (PO) must exist in order for a unit to request credit. See DFAS 37-1 Chap 130804</small>		Instructions for Wave 1 Turn-in Section	
Matches an entry on the ZOAREP report Or Webi Overage Repairable Management Report D6Z Turn-in Advice Code is 'blank'	<input type="checkbox"/>	Create match using PR listed below. Refer to XBRWM607G "Process Return (ZRL or ZRX) Purchase Requisition"	
Matches an off-line transaction D6Z Turn-in Advice Code is 'blank'	<input type="checkbox"/>	Remove '1W' turn-in advice code. Refer to XBRWM607G "Create & Process Return (ZXS) Purchase Requisition"	
Matches an item on order D6Z Turn-in Advice Code is 'blank'	<input type="checkbox"/>	Remove '1W' turn-in advice code. Refer to XBRWM607G "Create & Process Return (ZXS) Purchase Requisition"	
Performance Based Logistics Item D6Z Turn-in Advice Code is '1W.' Proof of turn-in to contractor must be provided to the SSA.	<input type="checkbox"/>	Create match using PR listed below. Refer to XBRWM607G "Process Return (ZRL or ZRX) Purchase Requisition"	
Item is excess D6Z Turn-in Advice Code is '1W'	<input type="checkbox"/>	Keep '1W' turn-in advice code. Refer to XBRWM607G "Create & Process Return (ZXS) Purchase Requisition"	
Requisitioning/Issuing SSA SLOC <small>Storage Location (RIC) of issuing SSA. Example: WFT1, WFP1</small>		Refer to XBRWM607D if Ship RIC is NOT your RIC.	
Requisition/Issue Document Number <small>Document number of the issue. Example: W91G6850562501</small>		N/A to ZOBUX process; used for research purposes.	
Requisition/Issue Material Number (NIIN) <small>Material Number of oldest PR or the requisition.</small>		Refer to XBRWM607G "Process Return (ZRL or ZRX) Purchase Requisition" if PR Material Number is different than the Turn-in Material Number.	
Requisition/Issue Purchasing Document (PO) <small>Passing Action Requisition document number Example: 4503700675 or 7102167351</small>		Reject turn-in if D6Z turn-in advice code is 'blank' and a PO is not listed.	
Return Purchase Request (PR) <small>Request for issue document number Example: 1002829475</small>		Use customer provided PR in ZOBUX.	
PO or PR Quantity <small>Must be greater than or equal to the turn-in quantity</small>		Reject turn-in if D6Z quantity is greater than the PR or PO QTY.	
Maintenance Supervisor Signature <small>Rank requirement established by local SOP</small>			

Figure 1. The 3rd Combat Aviation Brigade's Lean Six Sigma project team created this supplemental turn-in form to standardize turn-in information provided by unit clerks across the brigade. The form is the basis for an upcoming Global Combat Support System-Army job aid called the "Wave 1 Supplemental Turn-in Form."

responsibility for errors.

SSA clerks are encouraged to reject turn-ins in any of the following circumstances:

- Line battalions do not provide a supplemental turn-in form with their turn-in.
- The turn-in quantity is greater than the issued quantity.
- The turn-in advice code on the

turn-in request form (D6Z) does not match the turn-in advice code provided on the supplemental turn-in form.

- Line battalions request credit and fail to provide supporting information for a match.

Empowering Battalion Clerks

The LSS project team also focused on training line battalion clerks.

The 3rd CAB provided a block of instruction that focused on the financial implications of matching turn-ins, the process for identifying a match, and practical exercises.

Because technical supply personnel were not granted GCSS-Army access during the fielding, the brigade's support operations supply and services section had to bridge the information gap. Supply and services personnel exported data from GCSS-Army's ZOAREP and ZPROSTAT reports to distribute to line battalions.

The ZPROSTAT order status report lists all outstanding orders, while the ZOAREP report lists all recoverable items expected to be turned in except for off-line transactions such as aircraft on ground (AOG) orders. The AOG orders must be tracked manually by reconciling a list of received items and a list of unexpected turn-ins at the SSA to determine what items are still due for turn-in.

Units followed these steps while identifying matches:

- Identify if related NIINs exist.
- Identify and select the oldest entry on the ZOAREP report for any related NIIN.
- Identify and select the oldest entry for a transaction received offline.
- Identify and select a match for an item on order.
- Declare the item as excess if no match is available.

Training for SSA clerks included learning how to update their turn-in SOPs and how the supplemental turn-in form eliminated the need to search for interchangeable and substitutable NIINs. They also learned how to handle turn-ins if the item had been issued by another SSA.

Testing the Process

During the pilot to test the new procedures, two units conducted 33 turn-ins, which resulted in one defect (a 3-percent defect rate). The only de-

fect happened when a supplemental turn-in form was lost in transit. The SSA clerk did not attempt to establish a match and processed the turn-in using the 1W code.

An added benefit noticed during the pilot was faster processing times because SSA clerks did not have to search for interchangeable and substitutable NIINs. After receiving the pilot results, the 3rd CAB implemented the supplemental turn-in form as a requirement for all turn-ins.

Implementation

The control plan states that a PowerPoint slide should be created to capture turn-in errors and their associated financial impacts. This slide is briefed during weekly ground and aviation maintenance meetings. Because line battalions must brief defects, individuals are held accountable for any negative impact on the brigade's training budget.

The most important lesson learned during implementation was that line battalions that are properly trained on GCSS-Army are a tremendous asset. Since line battalion technical supply officers and clerks are constantly turning over, training is a quarterly requirement.

Understanding GCSS-Army also allows line battalions to provide feedback to the SSA clerks who are responsible for errors. It is essential for units to have read-only access to view GCSS-Army data because brigade representatives are not always available to provide top-level oversight. For instance, line battalions have the ability to check for defects before turned-in items leave the SSA and errors require an arbitration claim.

Recommendations

Based on this project, GCSS-Army training developers are publishing a job aid, the "Wave 1 Supplemental Turn-in Form." It will soon be available at <http://gcss.army.mil/>.

The team also encourages Wave 1

GCSS-Army units to implement the following recommendations.

Provide read-only access. Logistics officers, line battalion technical supply officers, and line battalion clerks should be granted access to a "view only" GCSS-Army role. A second-

The most important lesson learned during implementation was that line battalions that are properly trained on GCSS-Army are a tremendous asset. Since line battalion technical supply officers and clerks are constantly turning over, training is a quarterly requirement.

ary benefit is that sustainers have an opportunity to become familiar with the GCSS-Army interface before the next version is fielded to their units.

Consider more oversight by higher echelons. Division and higher echelons should review unexpected turn-ins for improper credit payments monthly and retain inappropriate credit payments to mitigate risk in case life cycle management commands elect to process credit reversals.

Brief your error rates. Brigade commanders must be briefed weekly on the turn-in error rate in order to oversee training dollars. The brief needs to quantify the number of defects and the dollar value of the equipment.

Assign a brigade S-8. The team recommends that aviation brigades be assigned an S-8 to examine how training dollars are spent and to find out if the unit is receiving the maximum amount of credit available. With limited training dollars available, it is vital that brigade commanders have someone in their formation dedicated to budget analysis because the status of funds value does not provide the entire story.

Adopt Wave 2 turn-in logic for ALE-P. The future Aviation Logis-

tics Enterprise-Platform (ALE-P) should automate turn-in advice code assignments by adopting the same turn-in logic as the version of GCSS-Army that was fielded during Wave 2. This is in light of the fact that aviation units will not be transition-

ing to that version of GCSS-Army in the near term.

The 3rd CAB's project is applicable to all units using the Standard Army Maintenance Systems-Enhanced or the Unit Level Logistics System-Aviation systems to process turn-in requests.

By targeting and working to correct defects resulting in improper payments, the 3rd CAB was able to ensure the auditability of its credit payments, maximize the amount of operations and maintenance credit it received, increase the throughput of turn-ins at the SSA, and decrease the man-hours required to manage credit. Following the LSS team's recommendations may help your unit improve its turn-in results and its bottom line.

Capt. Michael S. Smith is a support operations staff officer with the 13th Expeditionary Sustainment Command at Fort Hood, Texas. He served with the 3rd Combat Aviation Brigade, 3rd Infantry Division, assistant S-4 budget officer and is a recent Logistics Captains Career Course graduate. He is a Lean Six Sigma Black Belt and 2011 graduate of the United States Military Academy.

GCSS–Army: Wave 1 Is Done

With the Wave 1 fielding of the Global Combat Support System–Army now complete, the product manager is currently working through the even greater task of fielding Wave 2.

■ By James P. McDonough

The Global Combat Support System–Army (GCSS–Army) is an enterprise resource planning (ERP) system that facilitates near real-time management of all the Army’s sustainment missions.

GCSS–Army is a component of the Army’s logistics enterprise, which also includes the Logistics Modernization Program, General Fund Enterprise Business System, and Army Enterprise Systems Integration Program.

GCSS–Army replaces current tactical logistics management information systems, including the Standard Army Retail Supply System (SARSS), Property Book Unit Supply Enhanced (PBUSE) and Standard Army Maintenance System–Enhanced (SAMS–E).

It also replaces tactical financial management information systems, such as the Single Stock Fund Middleware (SSF–MW) and the Funds Control Module (FCM).

These systems performed their missions well, but GCSS–Army integrates all of their functions into a single database that provides accurate, near real-time tactical logistics and financial information for stakeholders throughout both Army components.

Two-Wave Deployment Strategy

During the test and evaluation phase of GCSS–Army, the product manager (PM) learned a number of valuable lessons that were incorporated into the plans for the system’s future fielding. Operational assessments and continuous evaluations were conducted with the 11th Ar-

mored Cavalry Regiment at Fort Irwin, California, in 2007 and 2010. The initial operational test and evaluation was conducted with the 2nd Brigade Combat Team, 1st Armored Division, at Fort Bliss, Texas, in 2011.

One lesson that the PM GCSS–Army learned from these events was that implementing the full system presented the receiving units with a number of challenges. To mitigate the risks to the units and to Army readiness, the PM decided to divide the system’s fielding effort into two waves.

By fielding parts of the solution at different times to the same units, the PM reduced the amount of time that the units’ information systems were unavailable and reduced the overall turbulence resulting from the new system fielding.

Wave 1 Fielding

The Wave 1 fielding began in February 2013 following the milestone decision authority’s full deployment decision in December 2012. Units in the Middle East were the last to receive the Wave 1 fielding. In November 2015, PM GCSS–Army achieved a major program goal by officially completing the Wave 1 effort.

In total, 281 supply support activities received the Wave 1 solution that replaced SARSS. Resource management offices throughout the Army converted from SSF–MW and FCM to GCSS–Army. The Wave 1 effort touched approximately 14,000 users Armywide.

To accomplish this major transformation, PM GCSS–Army employed as many as 25 materiel

fielding teams. To ensure that the transformations went as smoothly as possible, each team extensively prepared with the receiving units before switching over from the legacy systems to GCSS–Army.

The preparations included multiple checkpoints, beginning with teleconferences 180 days prior to the “blackout” before fielding (D-180) and continuing with on-site visits at D-120, teleconferences at D-90 and D-60, and on-site activities at D-30.

Receiving units prepared by having users take prerequisite web-based training, ensuring the accuracy of the data in SARSS, SSF–MW, and FCM, conducting leader awareness briefings, and preparing the site for the D-30 activities. D-30 activities included new equipment training for all users, data migration to GCSS–Army, data validation (ensuring that all data was migrated successfully into GCSS–Army), and the “go live” event.

Following the go live event, the materiel fielding teams left two team members behind for several weeks to provide over-the-shoulder troubleshooting and advisory support for the gaining users.

Wave 2 Fielding

While the completion of Wave 1 fielding is a major accomplishment for PM GCSS–Army, an even larger challenge is ongoing: the Wave 2 implementation. Wave 2 replaces PBUSE and SAMS–E. The number of users directly affected by Wave 2 is about 10 times greater than Wave 1—about 140,000 users in both

Army components.

Early in 2015, the PM conducted several lead site verification tests for Wave 2 at seven Army units, and the results were good. The milestone decision authority for GCSS-Army approved the full Wave 2 launch in July 2015, and the PM started the full deployment effort in August 2015.

Because the Wave 2 fielding scope is so much broader than the Wave 1 effort, the PM changed several aspects of the preparation and implementation process from the Wave 1 model to allow the Wave 2 fielding to proceed on schedule.

The Wave 2 effort has 44 materiel fielding teams and roughly three times as many simultaneous fielding events as Wave 1 had. The large number of units and sites involved in Wave 2 warrants more emphasis on video-teleconferences versus on-site visits to track unit preparations.

The process for Wave 2 starts at D-240, 60 days sooner than Wave 1 preparations began. Within each Wave 2 fielding event, two blackout periods occur: one for PBUSE and one for SAMS-E. Wave 2 involves many more users than Wave 1, and with two data migration events per unit, the amount of time involved with this process is doubled.

A Major Logistics Transformation

Aside from the differences in preparation for the Waves 1 and 2 fieldings, the overall deployment strategies for the waves are similar.

Because the implementation requires a major culture change in the Army sustainment community, GCSS-Army has adopted the industry best practice of establishing an organizational change management program to educate stakeholders about the changes. Key aspects of the program include the lead user program and new equipment training.

The lead user program identifies key leaders from the receiving Army units to attend advanced training before all other system users receive



A team from the Product Manager Global Combat Support System-Army conducts new equipment training with the 2nd Brigade Combat Team, 82nd Airborne Division, at Fort Bragg, North Carolina, in September 2015. (Photo by Darrel Page)

new equipment training. The lead user program ensures that certain users within receiving units can support the materiel fielding teams when the units convert from current systems to GCSS-Army.

New equipment training, which is critical to implementing a successful ERP, concentrates on core processes performed daily and weekly within the business areas. All new equipment training sessions are led by instructors who simulate actual scenarios online. The web-based training introduces and reinforces navigation techniques and self-help training aids within the GCSS-Army portal.

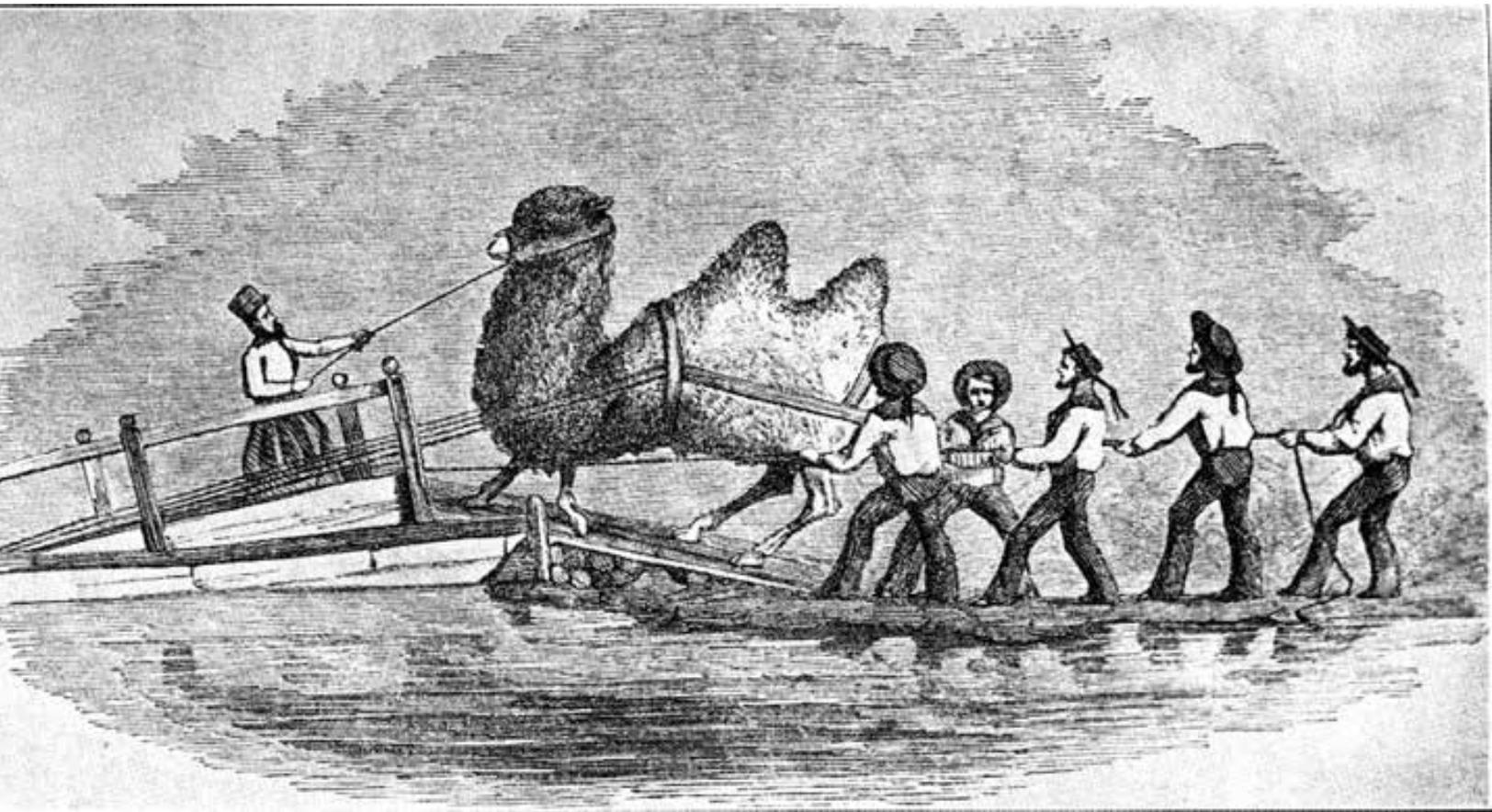
For the first time in history, Army commanders have access to logistics data in one data repository. ERP data in GCSS-Army is updated in near real-time and is available from any U.S. military computer with Internet connectivity and a common access card reader.

GCSS-Army makes managing the Army's supply and maintenance programs more effective and efficient, provides commanders with immediate combat readiness infor-

mation, and requests and tracks materiel and equipment that Soldiers need to perform their missions. The system also tracks all maintenance performed on combat and service vehicles, weapons systems, and other equipment throughout their life cycles.

The worldwide fielding of GCSS-Army represents the largest ERP deployment in the Army's history. It touches more than 154,000 users throughout the active Army, Army National Guard, and Army Reserve, both inside and outside the continental United States.

James P. McDonough is the branch leader of the Support Operations Branch, Program Management Division, Product Manager, Global Combat Support System-Army. He is a retired Army lieutenant colonel and has bachelor's and master's degrees in English from Duquesne University and a master's degree in philosophy from the University of Pittsburgh. He is level 3 certified in lifecycle logistics and level 2 certified in program management from the Defense Acquisition University.



The first leg of the Army camels' journey to the United States is depicted in this illustration by Gwinn Heap. The drawing was used for Jefferson Davis's report to Congress in 1857.

The History of the Army Camel Corps

■ By James A. Harvey III

Since 9/11, U.S. forces have been involved in continual operations in areas where camels dwell. While this has provided photo opportunities that can seem quite exotic, few realize that the Army once experimented with camels as an asset on its own soil.

Camels have been used by other militaries for centuries to haul baggage and conduct cavalry operations. As the United States began expanding westward, particularly after the Mexican-American War from 1846 to 1848, the nation acquired territory that had a different terrain than the east coast. It included many desert and arid regions where U.S. Soldiers

established forts after the war with Mexico and the 1845 annexation of Texas.

Acquiring Funding

As early as 1836, advocates were pushing the idea of the Army using camels, but Congress did not approve funding for military experimentation with camels until 1855.

The real push for camel experimentation appeared in 1848 when Maj. Henry C. Wayne of the Quartermaster Corps advocated camel use. Wayne sought the support of Jefferson Davis, a senator from Mississippi and the chairman of the Senate Committee on Military Affairs.

Davis was unable to successfully acquire funding from Congress on the project.

In 1855, as the secretary of war, Davis tried again and succeeded in obtaining the funding needed to acquire the camels. Congress appropriated \$30,000 for camel acquisition. The secretary of war tasked Wayne to purchase these camels in the Mediterranean region.

Acquiring Camels

The *USS Supply* was then tasked to carry the camels to the United States. Lt. David Dixon Porter, commander of the ship, ensured it was fitted for camel transport and care. Porter and

his crew departed New York City in the spring of 1855 en route to Italy to conduct another supply mission after which they would pick up Wayne for the journey. While waiting for Wayne, Porter visited Pisa, Italy, where he observed camels owned by the Duke of Tuscany.

Wayne proceeded to Europe separately. He stopped in the United Kingdom to visit camels in the London Zoological Gardens. Wayne then traveled to Paris to discuss camel use with the French military. The French had been using camels in Algeria already and had military experience with the animals.

Wayne linked up with Porter in Italy, and they began their voyage to Tunisia, stopping in the modern countries of Turkey, Greece, Malta, and Egypt along the way. The officers also traveled to Crimea to interview British officers about their experience with camels in the Crimean War and in India.

By mission end, 33 camels, both male and female and several types of breeds, were acquired in Turkey, Egypt, and Tunisia for the experiments. Saddles and covers were also purchased, and five Arab and Turkish camel drivers were hired.

On Feb. 15, 1856, the *USS Supply* headed for Texas. On May 14, the camels reached Indianola, Texas, and on June 4, Wayne began marching the camels to San Antonio, Texas. They arrived almost two weeks later.

Camel Experiments

Given some deaths and births and a new purchase of camels arriving on the *USS Supply* on Feb. 10, 1857, the Army had 70 camels for the experiments. The camels were stationed at Camp Verde, Texas, where Soldiers and civilians were trained on camels for military use.

The camels proved to be successful in tests around San Antonio and Camp Verde and in several long and trying survey and reconnaissance missions in the southwest. In particular, camels needed little forage and water compared to mules. They could

also ford rivers much easier without a fear of drowning and could carry heavier loads.

Forage often could be obtained in the desert as camels would eat food growing along routes that mules and horses would not. This helped ease the burden of transporting forage for the animals.

Camels also did not require shoeing like horses and mules did. They could climb mountain trails better than wagons and would not get stuck in the mud like the wagon wheels used by the Army at the time. The only downside was that the smell of camels appeared to bother the horses.

In 1860, then Lt. Col. Robert E. Lee used camels on a long-range patrol. He provided great reviews of the camels' capabilities, but information provided from his reviews may have been ignored with the onset of the Civil War.

Civil War Ends the Experiments

Early in the Civil War, Confederate forces captured Camp Verde along with the resident camels. However, they did not use the captured animals for any major operations during the war.

A second camel flock that had been moved to Camp Tejon, California, remained in Union control. It was transferred to different posts throughout the war because no one could think of a mission for them.

Secretary of War Edwin M. Stanton, unaware of the camel experiments, saw the camels as useless and ordered them to be sold. The camels in California were sold by the end of the war. The remaining camels that were recaptured from the Confederates at Camp Verde were sold in 1866. Many camels were abandoned by new owners or escaped into the wild.

In 1885, Douglas MacArthur (who went on to serve 52 years in the military and hold the top position in the Army) was living at Fort Selden, New Mexico, and recalled seeing a camel. Reports of alleged camel

sightings continued to be recorded until the 1940s.

A likely reason for the failure of the camel experiment was that the Civil War was a very mule- and horse-centric conflict. Most of the war was also in the east, where railroads, rivers, and roads were the dominate supply routes.

Another reason the camel experiment failed could have been that its major supporters were Confederates. Jefferson Davis was president of the Confederacy, and Henry Wayne was a brigadier general in its army. The Union likely ignored the great camel review written by Robert E. Lee in 1860 because of his association with the Confederacy as well.

If not for the Civil War and the broken continuity of camel advocates, camels may have been fully integrated into the Army in the southwest. They proved their worth and would have been a valuable asset in the numerous garrisons and conflicts in the west following the Civil War.

Given their proven abilities, camels would have improved logistics in the rugged southwest during conflicts and garrison resupply operations. The success of camels in French, British, and other armies throughout history appears to validate the Army camel experiments. Its failure was not caused by the camels' lack of capabilities.

James A. Harvey III is a military operations analyst and the operations officer for the Army Materiel Systems Analysis Activity Condition-Based Maintenance Team at Aberdeen Proving Ground, Maryland. He is also a Logistics Corps lieutenant colonel in the Army Reserve. He holds a bachelor's degree in political science from Towson State University and a master's degree in military studies with a concentration in land warfare from American Military University. He is a graduate of the Ordnance Officer Basic Course, Transportation Officer Advanced Course, Combined Arms and Services Staff School, and Intermediate Level Education Common Core Course.



41st Military Cul



Top, Spc. Sheah Johnson from Fort Stewart, Georgia, empties vegetables into a container during the student chef of the year event on March 7, 2016, at Fort Lee, Virginia. Right, Spc. K'shynah Greenidge from Joint Team Hawaii adds ingredients to a mixer during the same event. Johnson and Greenidge were just two of several competitors vying for the title of Armed Forces Student Chef of the Year. (Photos by T. Anthony Bell)



Culinary Arts Competitive Training Event



Left, Pfc. Carlos Cruz, Fort Riley, Kansas, mixes ingredients during the student chef event on March 7, 2016, at Fort Lee, Virginia. (Photo by T. Anthony Bell) Center, Army Reserve team members Sgt. Joshua Barnhill and Staff Sgt. Joseph Parker put the finishing touches on a cooking plan during the nutritional hot food challenge on March 8. Parker and Barnhill earned a silver in the category. (Photo by Timothy L. Hale)

Joint Team Hawaii won the title of Culinary Team of the Year as well as Overall Hot Food Kitchen, Team Buffet (Cold Food Table), and Overall Student Team. Team Hawaii's student team will move on to represent the armed forces at the American Culinary Federation National Student Team Competition in Phoenix, Arizona, in July 2016. (Photo by Keith Desbois)



Let's Talk!

milSuite

An expeditionary mindset: Ready for anything
 August 31, 2015
 By Lt. Gen. Gustave "Gus" Penna
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Story Highlights

- The Army needs a well-planned and well-executed logistics leader development campaign in order to develop an expeditionary mindset.

September-October 2015 issue of Army Sustainment magazine
 Edited by Juliana DeGroot on Aug 18, 2015 12:52 PM. Last modified by Juliana DeGroot on Sep 4, 2015 9:30 AM.

Army G 4
 An Expeditionary Mindset Ready for Anything
 By Lt. Gen. Gustave "Gus" Penna (@gustave.penna)
 The Army needs a well-planned and well-executed logistics leader development campaign in order to develop an expeditionary mindset.
<http://go.usa.gov/3zRah>

Dead Spot
 Defining Analytics and Its Supporting Role in Military Logistics Intelligence
 By Dr. Christopher R. Paparone (@christopher.r.paparone) and George I. Topik Jr.
 To improve organizational learning and decision-making, Army logisticians should view analytics as part of the broader perspective of evidence-based management, or what the authors call, military logistics intelligence.
<http://go.usa.gov/3zRah>

Commentary
 Trained and Ready Logistics Forces
 By Col. Robert L. Halcher Jr. (@rhalcher)
 The Army had to work hard to develop logistics force training and readiness at its current levels. The next challenge will be to maintain these levels of training and readiness.
<http://go.usa.gov/3zRah>

The Need to Expand Training and Education on Nonstandard Logistics
 By Capt. Christopher J. Sheehan
 Nonstandard logistics is an important component of unconventional warfare, but no existing course focuses solely on that subject.
<http://go.usa.gov/3zRah>

The urgency of training logistics leaders to perform expeditionary logistics hit home to me earlier this year when I spoke to a thousand majors in the Command and General Staff Officers' Course at Fort Leavenworth, Kansas. Many of these top-quality officers had served on multiple deployments to Iraq or Afghanistan. However, they all entered the Army in 2003, so they are heading out to run battalions and brigades having never seen

followed a well-defined model, Army Force Generation, which allowed us to focus resources for specific units, times, and missions. But gone are the days of predictable rotations. We have new missions all over the world, and now we have to be ready for anything at any time.

Join the conversation here!

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<http://go.usa.gov/3zRah>



Army Sustainment @ArmySustainment · Sep 11
 The Armament Graduate School is part of the Armament Research, Development and Engineering Center (ARDEC), whose... to me/HCytsEU

Ed Campbell @Campbellms · Sep 11
 @ArmySustainment @ARDEC
 Is this strictly a residential program, or is this something other members of the LCMC participate?

Army Sustainment @ArmySustainment · Sep 11
 Good question. @Campbellms Do you want to know if it's available to the @JML_LCMC?

Ed Campbell @Campbellms · Sep 11
 @ArmySustainment @JML_LCMC
 Seems like we would want people with the production operations onboard with this as well

Army Sustainment @ArmySustainment · Sep 11
 @Campbellms @JML_LCMC @ARDEC I agree. From a collaboration standpoint, it seems that it would provide a wider experience base.

Army Sustainment @ArmySustainment · Sep 11
 @Campbellms @ARDEC says it is open to all members of the LCMC. If you are @ Picalinny they will cover tuition and books. @JML_LCMC

Army Sustainment @ArmySustainment · Sep 11
 @Campbellms If traveling from outside Picalinny, books and tuition are covered but your home organization covers TDY costs @ARDEC @JML_LCMC

Army Sustainment @ArmySustainment · Sep 11
 @Campbellms If traveling from outside Picalinny, books and tuition are covered but your home organization covers TDY costs @ARDEC @JML_LCMC

Ed Campbell @Campbellms
 Following

@ArmySustainment @ARDEC @JML_LCMC
 Thanks! I'll definitely look into it...Hope this becomes online, as TDY these days is not easy to get.

1 FAVORITE
 5:55 PM - 11 Sep 2015
 Arkansas, USA

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WAVE 2 IS HERE!

- PROPERTY BOOK MANAGEMENT
- UNIT SUPPLY MANAGEMENT
- MAINTENANCE MANAGEMENT

HOW UNITS ARE PREPARING:

VISIT THE GCSS-ARMY WEB PAGE EARLY AND OFTEN

TAKE WEB-BASED TRAINING

PROVIDE COMMAND EMPHASIS

PLAN EARLY FOR DATA CLEANSING

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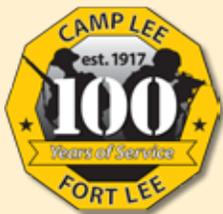
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Centennial Writing Program “100 Years of Army Sustainment”



The year 2017 marks the 100th anniversary of the establishment of Camp Lee, Virginia. As part of the centennial celebration, *Army Sustainment* and the Combined Arms Support Command (CASCOM) office of the command historian are soliciting articles on Army history relative to the theme “100 years of Army sustainment.”

The intent is to publish well-researched, high-quality articles related to Army logistics and sustainment topics from World War I to the present. The articles will be reviewed by the CASCOM historian staff, and the best will be selected for publication in *Army Sustainment* in 2017. If enough articles are received, the historian’s office plans to publish an anthology of the submissions in 2018.

The articles should follow the submission guidelines listed on the *Army Sustainment* website. Articles may be submitted at any time. The deadline for publication in the January–February 2017 issue is Sept. 1, 2016. The historian’s office will accept articles through 2017. Authors are encouraged to consult with the CASCOM command historian on proposed topics. For more information, email Dr. Ken Finlayson at kenneth.finlayson.civ@mail.mil or call (804) 734-1921.

Army Sustainment Magazine Online

