

NOVEMBER–DECEMBER 2012

ARMY SUSTAINMENT

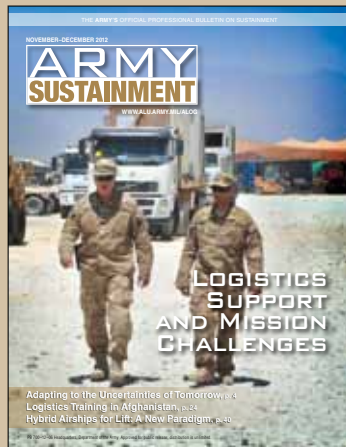
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LOGISTICS SUPPORT AND MISSION CHALLENGES

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ARMY SUSTAINMENT

ON THE COVER



MSG Patrick Perez, a noncommissioned officer-in-charge with the 3d Battalion, 401st Army Field Support Brigade, and SGT Joriann Garcia Hernandez, a supply sergeant with the 427th Brigade Support Battalion, discuss cargo placement inside the redistribution property accountability team yard (RPAT) at Bagram Airfield, Afghanistan. RPAT operations are one part of reverse logistics, which is discussed in the article on page 28. Also see "3d Sustainment Command (Expeditionary) Cleans Up" and more photos on the *Army Sustainment* website at <http://www.alu.army.mil/alog/>. (Photo by SGT Gregory Williams)

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"The Army sustainment leader of 2020 must be an expert in tactical operations while having knowledge of operational and strategic sustainment across logistics, personnel, and health service support domains."

Major General Larry D. Wyche
Commanding General, CASCOM

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The Sustainment Leader for the Army of 2020

By Major General Larry D. Wyche

As highlighted in the Army Posture Statement of 2012, our Army is in the middle of an unprecedented transition as we “rebalance force structure and make investment decisions that will shape the Army of 2020.” Key to this transition is remaining an agile and capable force that incorporates the lessons learned over the last 11 years of combat while looking toward future missions but not fighting the last war. Thus, the sustainment community must also transition in order to support the Army of 2020.

With changes in force structure and future mission sets tied to the new National Defense Strategy, sustainment leaders must be more agile and capable of understanding all elements of tactical, operational, and strategic sustainment across the logistics, personnel, and health services support domains. This article reexamines the skills and attributes required of sustainment leaders as we move toward the Army of 2020.

Sustainment Leader Requirements

Without question, we have the best trained and most experienced tactical and operational sustainment leaders in the Army’s history. We have battle-tested professionals, experts in their crafts, who ensure that warfighting commanders have what they need to sustain the fight. However, we must continue to expand our knowledge in order to provide the full range of sustainment support needed for the Army of 2020. We must build on this foundation and create sustainment leaders who understand the impacts of decisions across the various levels and their ordered effects.

The sustainment leader of 2020 must be able to effectively plan and operate in the joint, interagency, and multinational environments and know how to leverage the Army and national provider industrial base. We must inculcate throughout our ranks that sustainment is more than just logistics at the tactical level and work toward fully understanding all aspects of sustainment and how to leverage the nonlogistics sustainment capabilities at the Army, Department of Defense, and national provider levels. Through this understanding and integration of the full suite of sustainment capabilities, we will create a sustainment force equipped with the business acumen needed to effectively and efficiently manage the multibillion dollar Army enterprise, which effectively supports the joint force and combatant commanders.

Leader Development

To create the sustainment leader of 2020, we must look beyond the “one size fits all” career map of the past and stress the importance of talent management. We must see ourselves differently. Leaders must receive relevant training and education across the lifelong learning continuum that complements their experiences to gain a broader understanding of the Army and joint sustainment environments. This will require us to capitalize on leaders with specific knowledge, skills, abilities, and interests and provide them with opportunities that are beneficial to both the Army and the individual leader. These opportunities may be in the form of various education and leader development programs and broadening assignments within the Department of Defense, other Government organizations, or corporate America.

Multiple training and education programs are available to expand sustainment leaders’ knowledge and provide the experiences necessary for developing those leaders. Courses such as the Theater Logistics Planners Program (TLog) at the Army Logistics University, the School of Advanced Military Studies (SAMS) at the Army Command and General Staff College, the Major General James Wright Master of Business Administration Fellowship Program at the College of William and Mary Mason School of Business, and the Defense Comptrollership Program (DCP) at Syracuse University as well as a multitude of fellowship and training with industry opportunities are good examples. These courses arm leaders with a complementary set of management skills geared toward solving complex problems through critical thinking and creative solutions. Students’ activities include developing strategic plans



in SAMS, solving theater-level logistics problems in TLog, implementing cost-informed decisionmaking practices that allow for effective budgetary management in DCP, and solving complex human resource management, financial management, or supply chain management issues in senior service colleges or fellowships. All of these educational activities are designed to teach leaders *how* to think and not *what* to think. The Army's return on its investment will be through strategic placement of leaders in positions that allow it to make the best use of these skills.

A number of educational intern and fellowship programs, such as the White House and Congressional Fellowship or Joint Chiefs of Staff, Office of the Secretary of Defense, and Army Staff Intern programs, will provide our sustainment leaders with an understanding of the complexities of the various organizations and their relationships within the Government. Additionally, training with industry programs allow sustainment leaders to spend time in the civilian sector to gather best practices from industry leaders. Each of these programs exposes leaders to an environment outside of traditional Army assignments that allows them to gain knowledge and experiences that can be used later to improve policies, procedures, and practices within the Army.

Assignment Management

The final component of building the sustainment leader of 2020 is broadening assignments. We can no longer afford to have sustainment leaders remain only at the tactical level for most of their careers. We need sustainment leaders of 2020 to see the bigger Army and joint picture, and part of that growth is through a career management assignment process as opposed to a distribution management assignment process.

The sustainment leader of 2020 must strike a balance between tactical and enterprise Army assignments to gain the knowledge, skills, and experiences needed to become a sustainment leader in 2020 and beyond.

Today's sustainment leaders must encourage broadening assignments and reward those who take the assignments outside of their comfort zones in order to become better leaders. Promotion boards must reflect this new reality. This includes full exposure to and depth of knowledge of all branches that make up the sustainment warfighting function. Future sustainment brigade commanders of all branches must understand all aspects of sustainment to include the nonlogistics domains in order to fully integrate these functions into the overall sustainment concept of support.

Talent management is fundamental to developing

the sustainment leader for 2020. The key to talent management is leader involvement and engagement. Talent management should not be addressed solely by branch managers at the Army Human Resources Command as they are primarily responsible for distributing and balancing the force. Rather, talent management is an individual commander and senior leader responsibility. Although the Army Human Resources Command has a role in facilitating talent management, success requires leaders at all levels to engage their subordinates. Sustainment leaders must assess their personnel for the appropriate knowledge, skills, and abilities for each specific branch and grade and cultivate this talent through mentorship and coaching throughout their careers to ensure they have the experience and talent needed to be the sustainment leaders of 2020 and beyond.

AS SUSTAINMENT LEADERS,
WE ARE RESPONSIBLE FOR
DEVELOPING THE SUSTAINMENT
LEADERS OF THE FUTURE.
WE WILL ACCOMPLISH THIS
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ARMY'S SUSTAINMENT TALENT
THROUGH ASSIGNMENT AND
EDUCATIONAL OPPORTUNITIES.

The Army sustainment leader of 2020 must be an expert in tactical operations while having knowledge of operational and strategic sustainment across logistics, personnel, and health service support domains. As sustainment leaders, we are responsible for developing the sustainment leaders of the future. We will accomplish this by being engaged leaders and properly managing the Army's sustainment talent through assignment and educational opportunities. These sustainment leaders will understand the strategic impact of tactical decisions and be as comfortable operating in Army and joint enterprise assignments as they are in a brigade combat team. Our leaders will be agile, capable, and ready for the sustainment challenges of 2020 and beyond.

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National Security and Global Logistics: Adapting to the Uncertainties of Tomorrow

By Lieutenant General Claude V. Christianson, USA (Ret.)



As the realities of defense resourcing become increasingly evident, it is important to consider how we might best meet our national security objectives within a significantly constrained resource environment. Many individuals, groups, and organizations are properly focused on this challenge, and this article is not intended to supplant or usurp those efforts. The focus of this article is on the importance of our Nation's logistics capabilities to our national security and how those capabilities can ensure the flexibility and agility required to be successful in an unpredictable environment.

Many of the thoughts in this article were drawn from the



A Navy MH-60S Knighthawk helicopter picks up cargo from the fast combat support ship USNS Rainer during a replenishment at sea with the USS John C. Stennis. (Photo by PO3 Kenneth Abbate, USN)

Joint Operating Environment 2010 (JOE 2010), a document describing what is new and different about the future security environment as we envision it evolving over the next 25 years. Additionally, the Capstone Concept for Joint Operations (CCJO), a document describing how the future joint force can be successful in the future security environment, was used to help frame some of the thoughts contained here. These documents were interpreted through the lens of joint logistics in an attempt to distill the overarching principles that would be most meaningful to the logistics community.

The Nation's logistics enterprise is fundamentally responsible for enabling the projection and sustainment of military power in support of our national security objectives—a national security imperative. Given this context, if we cannot understand the logistics implications related to the uncertainties of tomorrow, we could very well be putting our national security at risk.

A Future View

We know it is not possible to accurately predict the future, but it is essential that we attempt to describe where we are going in order to prepare as best we can. This process of describing the future is essential for our success.

The JOE 2010 introduction contains a summary of the challenges likely facing the future joint force. This summary describes the characteristics of uncertainty, ambiguity, and surprise and indicates that these characteristics will dominate the course of events over the coming decades. The body of the JOE 2010 examines in detail the trends, contexts, and implications that can help shape our thinking about the future—not to predict events, but to offer ways to think about what might come. Additionally, the CCJO describes an approach for tomorrow's joint force; it presents the concept of "globally integrated operations" as the framework for shaping the force of the future. The concept describes a future force made up of a global network of forces and partners that will form, evolve, dissolve, and reform in different arrangements in time and space with significantly greater fluidity than today's joint force.

Attributes of a Future Security Environment

Three critical attributes of the future—dispersion, complexity, and uncertainty—apply particularly to the logistics enterprise. Each of these attributes has profound implications for our ability to project and sustain military power in support of national security objectives.

Dispersion. It seems certain that potential adversaries will go to the darkest corners of the globe (places with little to no governance; places where they can thrive) to plan and coordinate actions that might pose threats to our security. Our Nation, in responding to those possible threats, will find itself operating in remote, harsh, and globally distributed locations much like those we see today in places like Afghanistan. This kind of global dispersion should compel the logistics community to fundamentally change its sustainment concepts by moving from supply-based structures, doctrine, and processes



A construction vehicle belonging to the 9th Engineer Support Battalion, 2d Marine Logistics Group (Forward), sprays down a road during an operation in Helmand Province, Afghanistan, while building a main supply route in the Shir Ghazay area. (Photo by LCpl Katherine Solano, USMC)

to a globally focused, distribution-based concept that does not rely on inventories of supplies “just in case” we need them. The kind of global dispersion described here makes supply-based support concepts unaffordable.

Complexity. The inclusion of multinational, intergovernmental, and commercial organizations at every operational echelon has added a dimension of complexity we could not have imagined just a few years ago. Couple this with the dynamic teaming and partnering that is sure to be a part of every future operation, and we can deduce that we should shift how we institutionally and individually approach the concept of command and control and the value we place on relationships. The complex security challenges of tomorrow will likely require more than solely a military response, placing critical importance on integrating with partners at every level.

Uncertainty. If our adversaries are quick learners, as recent history has demonstrated, they will rapidly adapt to everything we do. As a result, we have to be more aware of the potential operating environment and our response times to crises will have to be shorter if we are to succeed. If the future is uncertain, spending precious resources on predicting trends or depending on accurate forecasts may not make sense. We will have to place a premium on our ability to be rapidly employable and adaptively sustainable on a global scale.

These three attributes are not meant to be comprehensive, but they do offer us an opportunity to develop a strategic framework that addresses the compelling need to refocus

our logistics enterprise. To accurately determine where and how to focus our efforts, let us try first to understand the implications of the attributes listed above. What do these three attributes mean for us as a nation and for logistics as an enterprise?

A Global Framework

At the highest level, the focus of the logistics enterprise must fundamentally shift away from mass and toward responsiveness. Delivering capabilities and sustainment with speed and precision wherever our Nation requires should become our sole focus. The more rapidly and precisely our Nation responds to global threats, the more efficiently we can use our limited resources. In the future security environment we envision, one could argue that rapid and precise response should be the overarching metric of success and that we should have a constant focus on this strategic outcome.

In order to begin addressing this type of paradigm shift, it is important to focus our efforts on three critical areas: describing the capabilities that are most critical to our ability to respond globally; establishing the necessary policies, processes, and structures to ensure we are ready; and forcing a continuous assessment of the readiness of those critical enablers against what are sure to be changing requirements and resources. Establishing the right policies, processes, and structures and developing a new readiness framework still need to be done.

It is paramount that we understand and accurately describe the critical logistics outcomes that will enable

our Nation to respond with speed and precision to global threats. In determining what is most critical, we should not proceed, as we often have, with the belief that everything we have done in the past is still relevant or that all logistics capabilities are equal in importance. Neither of those views will enable the kind of paradigm shift envisioned here.

The Four Global Objectives

There are four “global objectives” critical to ensuring that we as a Nation are prepared to respond militarily to any risk to our national security: global awareness, global networks, global mobility, and global sustainability. These four objectives must become part of a response framework that will enable our ability to get to and sustain the fight—whatever, whenever, and wherever it may be. Our ability to respond with speed and precision could result in reduced force structure and may very well prove to be our best security investment over time. These objectives are not mutually exclusive; rather, they are interdependent and must be viewed as a system of systems.

Global Awareness. This objective can be described in terms of how well we are able to accurately make sense of the global environment. The need to continuously assess the environment implies a very different sensor network than most organizations have today. Future success demands that we build sensor networks from the customer back, not from the strategic level forward as we have done in the past. We will need to invest in a sensor grid that enables visibility over global requirements, resources, and processes; provides the global knowledge needed to aid in strategic decisionmaking; and facilitates response with a high degree of global understanding. It is this “global sense making” that will provide the operational elements with the level of precision that they need.

Global Networks. This objective can be described as an interconnected web of global logistics capabilities, arrangements, and relationships that serve to enable our Nation to respond effectively. A subset of this global network is the transportation infrastructure we maintain to enable the movement of our forces and sustainment. This en route infrastructure is much more than physical infrastructure; it includes our relationships with many diverse global partners that enable our access to critical nodes or ports and also includes agreements for access to capacity as might be needed for throughput and sustainment.

Global Mobility. This objective can be described in terms of the force projection capabilities and capacities to deliver the operational effects needed by the Nation. From a logistics perspective, global mobility consists of the sea and aerial ports, lines of communications, and sustainment hubs that provide the global reach, speed, and capacity to move forces to the point of need, move sustainment in support of operations, move forces to other operational areas, and return forces to their home stations upon mission completion.

Global Sustainability. This objective can best be described in the context of a global defense supply chain; a

supply chain designed in harmony with the global networks above and focused on adaptive response to ever-changing sustainment requirements. It also includes the integration of both pre-positioned capabilities and global positioning to develop more cost-effective and responsive alternatives to meet requirements. A subordinate element of global sustainability is the Comprehensive Materiel Response Plan—a critical sustainment capability intended to respond very rapidly to the most serious risks to our national security.

These objectives serve as critically important components of a new global framework that can enable an accurate and continuous assessment of our ability to execute missions in support of national security. These capabilities also serve to give our Nation the resilience to adapt as the environment changes around us. We know the future will not be exactly as we predict—usually far from it. We can also assume that it is not likely that we will have exactly what we need when we are called. Therefore, our Nation’s ability to respond globally with speed and precision is a critical imperative.

Because uncertainty is an overarching attribute of any future view, we are obligated to have our collective finger continuously on the pulse of global events in order to know whether the risks to our national security have changed. All organizations must, therefore, be compelled to continuously assess the environment in which they find themselves. The ability to effectively adapt to a changing environment will be a critical organizational attribute for every part of the national security enterprise.

In the challenging world we will face, organizations and leaders must approach each challenge as unique. That means striving to understand problems in the context in which they are presented instead of applying fixed-template “solutions” to problems or challenges we may not have seen before. In this context, fixed templates can apply to doctrine, culture, processes, or organizational structures. In an unpredictable world, adherence to tight tolerances invites failure.

How will we know if we are ready to meet the Nation’s requirements within this new framework? We know that the Cold War algorithm of two major contingency operations no longer applies, so how will we know if we will be ready tomorrow? How will we know if we have the right policies, processes, and structures in place to enable the kind of adaptive response we will need in the future? Our national security strategy requires that we be able to project and sustain military power anywhere on the globe. How will we know whether our capabilities and capacities can meet joint force requirements within an acceptable time dimension and operational framework?

Lieutenant General Claude V. Christianson, USA (Ret.), is the director of the Center for Joint and Strategic Logistics at the National Defense University.

Time to Go Back to the Basics in Logistics

As defense spending is reduced, the author argues a need for the force to reestablish a technical knowledge base before it is lost.

By Brigadier General Steven A. Shapiro

In this time of diminishing resources, senior logistics leaders need to coach, teach, and mentor subordinates on the technical basics of the profession. If we do not, the Army may lose a set of skills developed over decades that will be critical in the next several years and exists only in a cadre of people approaching retirement.

The last decade of war has seen the culture of our logistics force transform dramatically. We have a generation of sustainment leaders with more combat experience than most other generations, yet we have sacrificed technical expertise because of the uniqueness of the current fight. That technical expertise, hard fought for and reinforced by generations of senior warrant officers, noncommissioned officers (NCOs) and Department of the Army (DA) civilians, must not perish. This expertise must form the nucleus of the profession of arms for logisticians.

In Years Past

Much of the technical knowledge that I have learned has come from subordinates during my 27-year career. One of my earliest memories of being a second lieutenant is that of the senior warrant officer in the battalion throwing an Army regulation at me and telling me to research something. I did not know it then, but he was training and mentoring me in his own way—technical mentorship. He had experienced the post-Vietnam War Army, and this was his way of ensuring that Soldiers like me got the technical knowledge to care for his Army in the future. As senior logisticians, we must ensure that we do the same for the next generation of logisticians.

It is easy to recognize the importance of tactical proficiency. For example, no one can deny the importance of having Soldiers experienced in conducting logistics convoys under fire. However, many junior logisticians do not understand that being technically proficient is just as important.

The Recent Fight

Since 11 September 2001, Logistics Corps Soldiers have been required to operate outside of their core com-

petencies in many ways. As Soldiers, we have accepted this, but it has contributed to the eroding of our technical competence. We have relied heavily on the Logistics Civil Augmentation Program (LOGCAP) to provide the majority of our support structure at large forward operating bases (FOBs) and even at some of our combat outposts (COP) in both Iraq and Afghanistan. LOGCAP performs many functions, such as retail and wholesale fuel farms, supply support activities (SSAs), dining facility operations, and Arrival/Departure Airfield Control Group (ADACG) operations.

As a result, many logistics Soldiers have been available to function outside their military occupational specialties (MOSs) to fill gaps identified by commanders. For instance, petroleum supply and maintenance companies have been operating as convoy security companies, providing security to contracted host-nation trucks rather than operating fuel points or maintenance shops.

Every day I see examples of our junior leaders relying on contractors for logistics missions that will be theirs in the coming years. This erodes not only the Soldiers' technical abilities but also the ability of our junior leaders to lead from a technical perspective. We have to stem the tide on this now before it becomes irreversible.

Technical Mentorship Gaps

Even when our deployed Soldiers are performing their MOSs on a daily basis, they are often hampered by a lack of nearby senior NCOs and warrant officers to provide mentorship. Most of the COPs in Regional Command East are dispersed throughout several mountain ranges and are accessible only by air or poor roads. Most have only a handful of junior logisticians to provide support because of the dispersion of each forward support company. For instance, most of the COPs are supported by only one food service specialist (MOS 92G) in the rank of specialist or private first class. That junior Soldier runs an expeditionary tricon kitchen system by himself often without visits from food service NCOs for months at a time because of geographic challenges. This Soldier operates on limited experience without the

benefit of having a mentor on hand to provide technical guidance.

Back to Basics

We must take steps now, such as reading, understanding and complying with regulations, and creating mentor relationships, to stop the erosion of our technical competencies, or the next generation of senior leaders may lack the requisite technical knowledge to lead our Logistics Corps. We now hear the call for “back to basics” from our senior leaders and I believe the timing is spot on. In many instances, the “basics” for logisticians means reading and following regulations and standard operating procedures and doing things by the book. I submit that the keepers of these basics are our senior warrant officers, NCOs, and DA civilians who grew up in an Army with Inspector General and other command inspections.

I was raised by a group of warrant officers, NCOs, and DA civilians who knew their trade. The warrant officers made me read the Army regulations before I asked them questions. In this way, they made sure all of my decisions were based on a true requirement. If the regulations did not support what needed to be done, they knew where to go for an exception to policy. They did not fly by the seat of their pants.

The supply sergeants and motor sergeants were hardliners. If it was not in black and white, it was not worth talking about. Verbal (or email) requests were not accepted for anything. Stock numbers and document numbers were required. I was never allowed to just do what I wanted; I had to sign for everything. In this time of diminishing budgets, we must get back to adhering to regulations, and we must train our subordinates to do the same.

I now see this type of mentoring happening regularly when dealing with the senior logisticians on the U.S. Army Europe staff and in its formations. I see chief warrant officer 5s and senior DA civilians mentoring junior warrant officers on Property Book Unit Supply Enhanced operations and the transition from left-behind equipment to the unit-maintained equipment program.

We need to encourage and formalize this mentoring process and make it a priority. We need to get back to these standards because we cannot afford to continue business as usual. I believe that empowering the warrant officers, NCOs, and DA civilians who run the technical aspects of our Army is best way to get there. When we identify mid-level leaders who are not ready, we need our senior warrant officers and NCOs to prepare those leaders through professional development programs and by coaching and mentoring them. If we do not, we are in danger of losing skills developed over decades, which are needed to get through the austere times ahead.

The Way Ahead

Leaders can help bridge the gap to get back to basics in the following ways:

- ☐ First, make technical mentorship a priority. This is the best way to make sure the next generation of leaders understands their trade. Some of this may take the form of “tough love”—that is okay.
- ☐ Read, understand, and discuss Army regulations, unit standard operating procedures, and other essential documents. (This should form part of your professional reading.)
- ☐ Train and empower mid-level managers. They are tomorrow’s future logistics leaders.
- ☐ Do not make your surroundings a “zero defect” area. Underwrite your junior leaders and technicians. If you do this, they can become informal leaders among their peers.
- ☐ Take responsibility for your footprint. Too often we find excess in somebody’s footprint that they claim is not theirs. If it happens in your battlespace it is your responsibility, even with logistics.
- ☐ Take control of Global Combat Support System—Army fielding for your organization. (Do not leave this to the product manager.)
- ☐ Own your logistics data because it is one of the Army’s most critical logistics assets.
- ☐ Use the Standard Army Management Information System the way it was designed to be used. If you are unsure about its operation, break out the user’s manual or ask a senior technician.
- ☐ Find out what you need to do to make the Army audit ready by 2017.
- ☐ Check on the Soldiers who are spending the Army’s money. They need your guidance.
- ☐ Reestablish maintenance “shoot outs” as we enter the unit-maintained equipment program. Running these forums is a lost art in the greater Army. The lack of a materiel management command at the division, corps, and theater levels will make this hard, but it is worth it.
- ☐ Consider making motor stables a regimented process. It may sound old fashioned, but it worked in the past.
- ☐ Do your best to work field service representatives out of a job. They won’t be around forever.
- ☐ And finally, get ready for unit-maintained equipment. It’s coming.

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Proposed Active Component Cuts Put Reserve Financial Management Centers at Risk

Reducing the number of Active component personnel assigned to Reserve component financial management centers could degrade the quality of oversight of financial management operations.

By Major William C. Keltner

With the wars in Southwest Asia ending, the Active Army will soon shrink. Now that the withdrawal from Iraq is complete and the withdrawal from Afghanistan is being planned, proposals for reducing Army personnel are picking up steam. In these times, no Active component (AC) duty position is completely safe from the looming “chopping block.” If proposals surface that include eliminating the AC positions that are assigned to the Reserve component (RC) financial management centers (FMCs), I believe that risks would be involved with such cuts.

I recently served as the operations officer of the 469th FMC, which oversees the control and disbursement of public funds on the battlefield. I have observed firsthand the valuable contributions to operations, planning, and training made by the AC personnel working in these positions to ensure that the 469th FMC had proper oversight of taxpayer dollars. I also bear witness to what can happen when enough oversight of financial management (FM) is not provided. Actually, we need only to look at the historical relevance of the RC as part of the total force, the critical FM mission of the 469th FMC within the RC, and the work performed by AC personnel in an FMC to realize that eliminating these positions may have far-reaching, negative consequences.

End Strength Reduction

From a historical perspective, a post-war drawdown is inevitable. One should expect AC strength to be reduced after a drawdown of wartime operations. Since the birth of our Nation, the Active Army has ramped up during wartime and drawn down during peacetime. As Field Manual (FM) 1, The Army, points out, “After the Revolutionary War, the government reduced the Army to fewer than 100 Soldiers. This action began a recurring pattern of small peacetime forces followed by wartime expansion.”

However, we now find ourselves in a different kind of war: a protracted war on terrorism. During World War II, we knew where the Axis Powers were located. We battled on the front lines until their militaries and governments were defeated. Now, no front lines exist. Our current enemies are sometimes hard to find, are not always state sponsored, and may obtain unconventional weapons that can reach deep into the heart of our country. FM 1 states—

Today's enemies include nonstate organizations. Their members and power sources are hard to find and defeat. New enemies may appear with little warning. This situation makes it impossible to determine when the War on Terrorism will end. It places a premium on operational flexibility and adaptability—attributes of Army forces with balanced capabilities. It requires Army forces to sustain a consistently high readiness level.

Total Force Concept Outside of War

Our military, as a total force, has always relied on a capable Reserve force that is larger than the Active force. The Army Reserve must maintain a high state of readiness as indicated by the Total Force Concept.

The current critical importance of the Army Reserve is illustrated by Secretaries of Defense who have handed down guidance concerning how the Reserves are a vital part of the total force. Secretary of Defense Melvin R. Laird's 21 August 1970 policy memorandum, Support for Guard and Reserve Forces, stated, “Economies will require reductions in overall strengths and capabilities of the active forces, and increased reliance on the combat and combat support of the Guard and Reserves. . . . A total force concept will be applied in all aspects of planning, programming, manning, equipping, and employing Guard and Reserve Forces.”

Secretary of Defense James R. Schlesinger's 23 August 1973 policy memorandum, Readiness of the Selected Reserve, stated, "Total Force is no longer a concept. It is now the Total Force Policy which integrates the Active, Guard and Reserve forces into a homogenous whole." Clearly the total force depends on Reserve forces to be ready to perform their wartime missions.

469th FMC Mission

The 469th FMC has a vital mission within the total force. It ensures FM support to the theater C-8, J-8, and G-8 in support of overseas contingency operations, with emphasis on the full range of FM operations within the U.S. Southern Command (SOUTHCOM). The 469th provides technical oversight for all FM companies and detachments in theater and for all theater finance operations. This support includes negotiating with host-nation banks, advising unit commanders on the use of local currency, and coordinating with national providers.

The 469th FMC also sustains Army, joint, and combined operations by providing timely contractual and procurement payment and theater disbursing capabilities. In short, it ensures public funds are not lost and are disbursed properly so that the Army can accomplish its

mission. The 469th's mission is made even more critical during these times of great budgetary constraint.

The AC personnel are leaders who direct, plan, and supervise daily staff operations and ensure personnel are trained, equipped, and ready to perform their missions. The experience, expertise, and networking connections that AC personnel bring to the 469th FMC are invaluable for training during battle-assembly weekends, annual training, and deployments. The AC personnel shoulder most of the training burden and offer day-to-day coordination and planning, which is made possible by their AC experience.

The Importance of Expert Oversight

The 469th FMC is theater-committed to SOUTHCOM. Accordingly, the 469th provides FM support to U.S. Army South as it executes contingency operations in the SOUTHCOM area of responsibility. This support is provided by an FM team of AC personnel who deploy within 48 hours of notification as part of U.S. Army South's initial-entry task force. In 2010, the team quickly deployed to Haiti to set up disbursing operations after Hurricane Tomas. These Active Duty personnel provided the immediate response critical to initial-entry disbursing

The author (far right), an Active component financial management officer, trains financial management support operations officers from both the Active and Reserve components at Diamond Saber 2010.



operations. If the operation depended on the mobilization of RC personnel, the response would have been much slower.

The 469th FMC was the exercise agent for Diamond Saber 2010. Diamond Saber is the Finance Corps' premiere annual FM exercise involving up to 50 units and more than 600 personnel from Army Active and Reserve components. Participants receive training on their wartime missions, such as management of commercial vendor services and disbursement operations, financial management support, and military pay operations. Exercise agent duties rotate to a different FMC each year. The 469th FMC could not have accomplished this colossal task without the planning and operational involvement of its AC personnel. Thus, removing the AC personnel may curtail the ability of RC FMCs to host future exercises.

Providing technical oversight through the proper funding and management of FM units within a theater of operations is the 469th FMC's primary wartime mission. For this, the AC personnel play a major role in mission planning, training, and execution.

During its previous deployment, the 469th FMC provided oversight of all FM companies and detachments supporting Operations Iraqi Freedom and Enduring Freedom. It managed one treasury and two local depository accounts with monthly balances exceeding \$200 million. It centrally funded over \$2 billion in U.S. and foreign currency to the FM units. The 469th also coordinated with the Defense Finance and Accounting Service, the Army Financial Management Command, the Federal Reserve Bank of Boston, the Department of the Treasury, the Iraqi Ministry of Finance, and others to increase Iraq's confidence in its financial institutions and to reduce the amount of U.S. dollars in theater. The 469th FMC's AC personnel played a major role in all of these wartime accomplishments.

The Buck Stops Where?

Overall, the 469th ensures public funds are properly disbursed so the Army can accomplish its mission. But does the buck stop there? Who is ultimately responsible? With recent transformation, the Army has removed all FM units from the mission command of FM experts such as the 469th FMC. FM units are now under the mission command of sustainment commanders. The sustainment commanders are in charge of both the FM mission and the FM units executing that mission now that FM is a sustainment mission.

I have spent the last 8 years with sustainment commands, where I worked as a comptroller, FM support operations officer, and FMC operations officer. Most commanders and staff that I have seen within the sustainment community are happy to be actively engaged in accomplishing their FM mission. Some of them are

not. I have seen occasions when FM personnel have not been used within their FM occupational specialty. Amazingly, I even saw a sustainment command use an HR staff officer to oversee all FM operations in Iraq. Often I have found that sustainers are just too busy with other logistics concerns and have neither the training nor the time to be FM experts.

Naturally, the Army's sustainment commanders depend on FMCs now more than ever to have the overall technical expertise to ensure that FM units are accomplishing the FM mission throughout the theater. However, if the FM mission is not accomplished, funds may be mismanaged or lost, the overall mission of the maneuver commander on the battlefield may be placed in jeopardy, and the sustainment commander may be held to blame.

The AC positions were integrated into the RC for a reason. They were a critical necessity then, and in my opinion, they still are. AC personnel are not an extra luxury to embellish the Reserve FMCs. They are a must. Cutting the AC personnel from the 469th FMC would unequivocally remove its critical AC experience, expertise, and FM oversight, causing some dire consequences. The unit's mission readiness would significantly decrease. The 469th FMC would lose the ability to provide SOUTHCOM contingencies with the level of support that it provided in Haiti. The ability to conduct Diamond Saber would be severely hampered. The ability to conduct central funding operations and internal control as part of technical oversight support for theater units would be greatly diminished. Training readiness for the FMC's mission would also decrease.

The better choice is to keep the AC positions in place. If that is not feasible, another recommended course of action would be to replace the AC personnel with Active Guard Reserve personnel who could at least provide the needed expertise and full-time support. If neither is done, FM oversight of funds may be further diminished. At the end of the day, the potential risk is having more losses of funds critical to supporting the operational needs of the Soldier.

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Warrant Officer Professional Development: An I Corps Perspective

By Chief Warrant Officer 5 Christopher A. Ferguson

The I Corps G-4 at Joint Base Lewis-McChord (JBLM), Washington, hosted the inaugural JBLM Sustainment Warrant Officer Conference on 30 November 2011. The conference was established as a prelude to a more structured and enduring approach to leader development with an emphasis on warrant officer professional development (WOPD). This approach to leader development is based on Army Regulation 350-1, Army Training and Leader Development; the Forces Command (FORSCOM) Campaign Plan 2011-2015; and I Corps Operation Order 241-11, I Corps ARFORGEN [Army Force Generation] Cycle Training Guidance 2012-2013.

The purpose of the conference was to facilitate the FORSCOM and I Corps commanders' leader development guidance with a line of effort on warrant officer mentorship and professional development. The G-4 sponsored this conference to launch its campaign on WOPD as an enabler for the Department of the Army and FORSCOM "Back to Basics" initiative and to meet the Army Campaign Plan intent for full-spectrum operations.

The agenda was built around a broad spectrum of subjects that were relevant to a multicomponent audience. The 286 attendees included Washington and Oregon Army National Guard members and Active and Reserve component members.

Guest speakers included senior warrant officer leaders from across the Army: the Senior Warrant Officer Advisory Council to the Army Chief of Staff, the senior warrant officer adviser to the Combined Arms Center commander, the deputy commandant for the Warrant Officer Career College, regimental chief warrant officers from various proponents, and various branch representatives from Human Resources Command.

Attendees indicated that this was a successful event and should serve as the template for similar WOPD forums across the Army.

WOPD Challenges

More than 450 warrant officers at JBLM are assigned to FORSCOM units subordinate to the I Corps, and an additional 250 are assigned to tenant units across JBLM. Many of these warrant officers find themselves in increasingly isolated environments as a result of—

- ❑ Modularity, which has created a more brigade-centric Army.
- ❑ The ARFORGEN model, which generates frequent modular unit deployments.
- ❑ Low density career management fields, which further restrict the exposure of junior warrant officers to their counterparts.

These three dynamics potentially affect the technical and leader development of individual warrant officers who are assigned to any given unit for an extended time. See chart on page 14.

**SENIOR WARRANT OFFICERS
TYPICALLY HAVE SUPPORTED
A WIDE RANGE OF ARMY
MISSIONS THROUGHOUT THEIR
CAREERS.**

Warrant officers are inherently in low-density technical career fields. Total warrant officer strength is less than 1 percent of the entire Army, and that ratio is proportionately smaller within unit formations.

Upon promotion to chief warrant officer 2, warrant officers take an oath of commission and are consequently managed with the rest of the commissioned officer population with regard to unit-level training. The current doctrinal guidance for leader training and development within tactical units typically establishes separate lines of effort on enlisted and officer development. Although the role of the warrant officer has evolved into a more multifunctional leader-Soldier-technician-adviser, the Army warrant officer remains primarily an adaptive technical expert and requires targeted technical development in addition to regular officer leader training.

Warrant Officer Assignments

A typical Stryker brigade combat team (SBCT) of 4,000 Soldiers is authorized 40 warrant officers, of which only 1 is authorized in military occupational specialty (MOS) 920A (property book officer), 1 in

WARRANT OFFICER LEADER DEVELOPMENT MODEL

Years Warrant Officer Service	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																				
Grade	W01		W02		CW3			CW4			CW5																																							
Institutional Training and Education W O C S	W O B C	(MEL 7)		WOAC (MEL 6)			WOSC (MEL 4)			WOSSC (MEL 1)																																								
				Phase 1	Resident Phase	Resident Training		Resident Training																																										
		Functional Training																																																
Operational Assignments	Platoon		Company		Battalion																																													
						Battalion		Brigade		Division																																								
												Brigade			Division			ACOM/ASCC/DA Staff																																
Self Development (suggested, not required)	AA Studies																																																	
			Baccalaureate Studies																																															
									Continuing Education/Graduate Studies																																									
			Professional and Technical Reading/Study																																															
Legend:	AA = Associate of Arts					DA = Department of the Army					WOBC = Warrant Officer Basic Course					WOCS = Warrant Officer Candidate School					WOSC = Warrant Officer Staff Course					WOSSC = Warrant Officer Senior Staff Course																								
	ACOM = Army command					MEL = Military education level					WO = Warrant officer																																							
	ASCC = Army service component command					WOAC = Warrant Officer Advance Course																																												
	CW = Chief warrant officer																																																	

Warrant officers have a defined progression that is based on their training, education, experience, and time as a warrant officer.

MOS 882A (mobility officer), and 1 in MOS 420A (personnel technician). Fifteen other MOSs also are authorized only one warrant officer per SBCT. Some of these mission-essential MOS positions are assigned to the brigade headquarters, but sustainment warrant officers are mostly assigned to the brigade support battalion.

These warrant officer authorizations are typically chief warrant officer 2 positions that are often filled by warrant officer 1s. The most senior warrant officer in an SBCT is normally a chief warrant officer 4 MOS 915A (maintenance technician) who is assigned to the brigade support battalion. More senior warrant officer positions are authorized for installations with a division or corps headquarters.

Technical Expertise

Senior warrant officers typically have supported a wide range of Army missions throughout their careers. Warrant officers in the Army have specific levels of technical ability. They refine their technical exper-

tise and develop their leader and management skills through tiered progressive assignments and education.

Any effective technical development program requires vertical and lateral networking and mentoring to efficiently attain progressive levels of expertise. Senior warrant officers at every level of the organization must take ownership of WOPD to create a conduit for exposing both junior and senior warrants to all of the available resources and technical knowledge. Department of Defense supporting agencies, the Army Training and Doctrine Command (TRADOC), and other commands are equally viable resources for expanding the warrant officer knowledge base.

Senior Warrant Officer Advisory Council

The senior warrant officer at the highest command level should establish a council of senior warrant officers from subordinate units to develop programs that are synchronized and support the commander's overarching leader development and training guidance. The key components of these programs should include

training, mentoring, and networking. The Senior Warrant Officer Advisory Council serves as an excellent model for division- and corps-level councils.

The senior warrant officer at each installation should be responsible for advising the senior commander on talent management and career development assignments for all warrant officers in the command. He should also be responsible for facilitating a council of senior warrant officers from each subordinate brigade-level command. The mission of that council should be to advise, manage, and make recommendations to commanders on career development assignments for all warrant officers. This program should be formalized by a published operation order and be integrated into each commander's leader development and training program.

Army Leader Development Program

The Army Leader Development Program (ALDP) merged existing Army leader development (LD) initiatives into a single program. ALDP was established in 2007 by the Army Chief of Staff.

The Quarterly Leader Development Review (QLDR) is a body of senior Army leaders that focuses on the formal execution of approved Army LD programs. QLDR provides supporting commands and lead agents the opportunity to collectively address ALDP issues. ALDP serves as the main platform for integrating WOPD initiatives into TRADOC-supported programs such as professional military education (PME) and the Warrant Officer Education System (WOES).

Throughout a normal 20-year career cycle, a warrant officer will have the opportunity to spend no more than a cumulative 18 to 24 months in a TRADOC training environment for PME and WOES. Most of these formal training opportunities occur upon initial entry, and progressive training occurs at varying intervals of career progression. Since career progression predominantly occurs in an operational environment, a formal decentralized program similar to the key developmental management of field-grade officers as outlined in Department of the Army Pamphlet 600-3, *Commissioned Officer Professional Development and Career Management*, is needed.

Improving Warrant Officer Assignments

Because warrant officers gain their technical experience through progressive assignments and training while assigned to operational commands, it is important for assignments to be managed at the installation level. This ensures that the right talent is being used in the appropriate positions so that individuals gain experience. This approach will create broadening job opportunities as each warrant officer develops his skills.

The Human Resources Command's new policy of decentralizing pinpoint assignments commits newly

assigned warrant officers to specific unit identification codes. Company and field grade officers are assigned in a similar manner; however, after 1 year in a position or based on the internal operational needs of that installation, each subsequent duty position for that officer is managed internally by the commander. Company and field grade officers who are on a 36-month tour of duty typically have the opportunity to serve in three different duty positions, each for a 12-month period. This rotation of job positions is crucial to diversifying each officer's knowledge base.

Although warrant officers are single-track officers, a similar approach of managing individual talents should be employed at the installation level. If a warrant officer is assigned by the Human Resources Command to a BCT and remains in that same position for 36 to 48 months, his exposure to new challenges is usually limited. This significantly restricts that officer's technical development. Likewise, if a warrant officer is initially assigned to a BCT as a warrant officer 1 and remains in the same position for a 36 to 48 month period, he will essentially have an additional 2 years before being eligible for promotion to chief warrant officer 3. However, he will not have gained the broadening exposure necessary to develop the skills needed to perform as a fully qualified chief warrant officer 3.

To optimize the technical development of warrant officers, a talent management program must be in place at each installation to ensure that each officer is afforded the opportunity for at least one progressive assignment change during a 36 to 48 months tour. Each command should use its senior warrant officer to create a talent management program that best fits the operational needs of the broader installation.

This process should be formalized similar to the management of the field-grade promotion slate or the company-grade order-of-merit list. The success of the warrant officer development program will ultimately mandate that warrant officers take ownership of their own professional development in order to remain relevant and credible to the Army mission as the overall environment transitions to full-spectrum operations.

Chief Warrant Officer 5 Christopher A. Ferguson is the senior supply systems technician for the I Corps G-4 at Joint Base Lewis-McChord, Washington. He wrote this article as part of an initiative to promote formalized warrant officer professional development at the installation level. He holds a bachelor's degree in business management from the University of Maryland and a master's degree in logistics management from the Florida Institute of Technology. He is a graduate of the Army Logistics Management College's Logistics Executive Development Course.

Refining the CSSB at JRTC

Combat sustainment support battalions can benefit greatly from a rotation at the Joint Readiness Training Center, where units have the opportunity to exercise skills that are normally applied only during deployments.

By Major James J. Zacchino, Jr.



Soldiers from the 514th Support Maintenance Company engage villagers during a JRTC situational training lane in August 2011. (Photo courtesy of the 514th Support Maintenance Company)



Combat sustainment support battalions (CSSBs) are continuing to exercise and refine their sustainment functions in nonlinear environments. The CSSB's abilities are tested daily across the full spectrum of operations. Because of this, CSSBs require challenging training designed to stress capabilities and develop flexibility and adaptability. This training must also provoke the creativity and thought for formations to grow in proficiency, control complexities, and sustain forces across multiple operating environments.

The Army's combat training centers (CTCs) offer dynamic opportunities for echelon-above-brigade (EAB) units to exercise and shape the capabilities needed to fight, survive, and win. CTCs must offer training opportunities that are not available at home station and that are essential for future logistics success and design employment.

JRTC Rotation 11-09

The 548th CSSB, 10th Sustainment Brigade, at Fort Drum, New York, served as a rotational unit supporting the 4th Brigade Combat Team (Airborne), 25th Infantry Division, from Fort Richardson, Alaska, during the Joint Readiness Training Center (JRTC) 11-09 rotation in August 2011. According to the JRTC operations group, the 548th CSSB was the first CSSB to train at the Fort Polk, Louisiana, CTC in nearly 7 years.

The JRTC 11-09 rotation proved to be a successful EAB rotation proof of concept. The 548th CSSB served as the task force headquarters in a counterinsurgency scenario, exercising mission command for five companies. The Headquarters and Headquarters Company, the 514th Support Maintenance Company, the 543d Quartermaster Supply Company, and the 590th Field Services Company, were all subordinate to the 10th Sustainment Brigade at home station. The 25th Transportation Company (palletized load system) from the 524th CSSB, 45th Sustainment Brigade, at Schofield Barracks, Hawaii, was attached to the 548th CSSB during JRTC training.

The 548th CSSB's training not only exercised company and platoon teams certifying for deployment to Operation Enduring Freedom; it also served to substitute for some of the contract support normally required for BCT rotations at JRTC. The 548th CSSB company teams also participated in recovery, convoy security, and base defense situational training lanes provided through JRTC's premier exercise resources. The CTC experience proved invaluable to the 548th CSSB's Task Force Sword during JRTC Rotation 11-09. Battalion, company, platoon, and squad teams exercised critical functions and mission sets only possible at a CTC.

Recommendations for CSSB Rotations

A CSSB brings multifunctional capability to a JRTC rotation. To optimally support a JRTC rotation, the unit's

modular composition must be designed to support maneuver forces in varying scenarios. The CSSB must have palletized load systems to deliver supplies, field-level maintenance assets to reinforce capabilities, ammunition supply point operations, bulk petroleum resupply, and multiclass supply support.

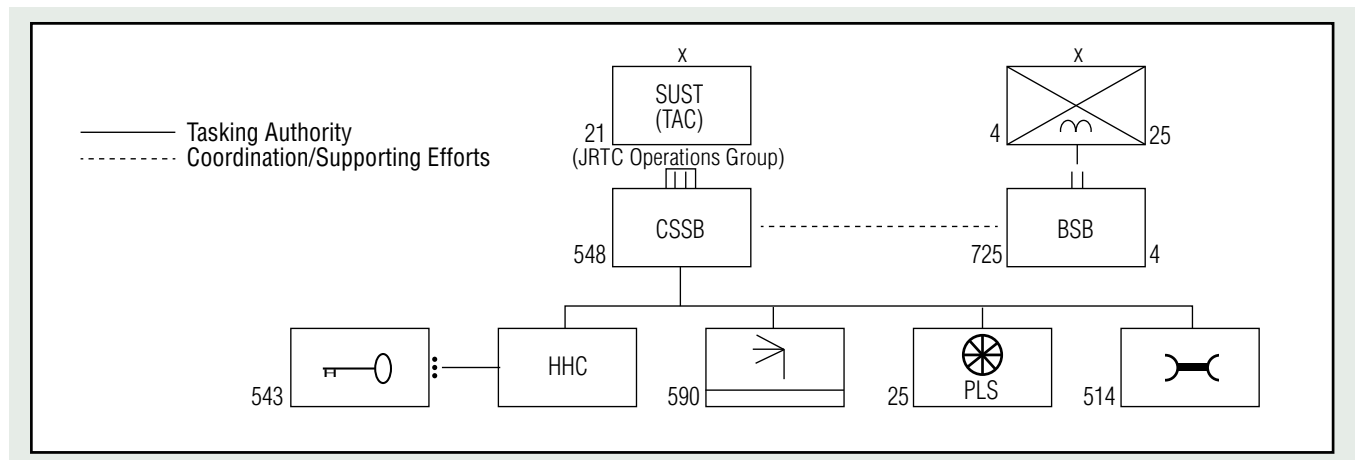
Further capabilities provided by these elements include convoy security for EAB elements traversing areas of operations, area recovery support, and partnerships with foreign military and civil authorities. Additional EAB capabilities may include shower, laundry, clothing repair, mortuary affairs, and aerial delivery.

If properly aligned with company and platoon teams, a CSSB can easily provide support and services normally offered through contract support at a CTC. To maximize the training opportunity, CSSB elements must provide sustainment to the BCT in a tactical mode as opposed to providing administrative support to a contract.

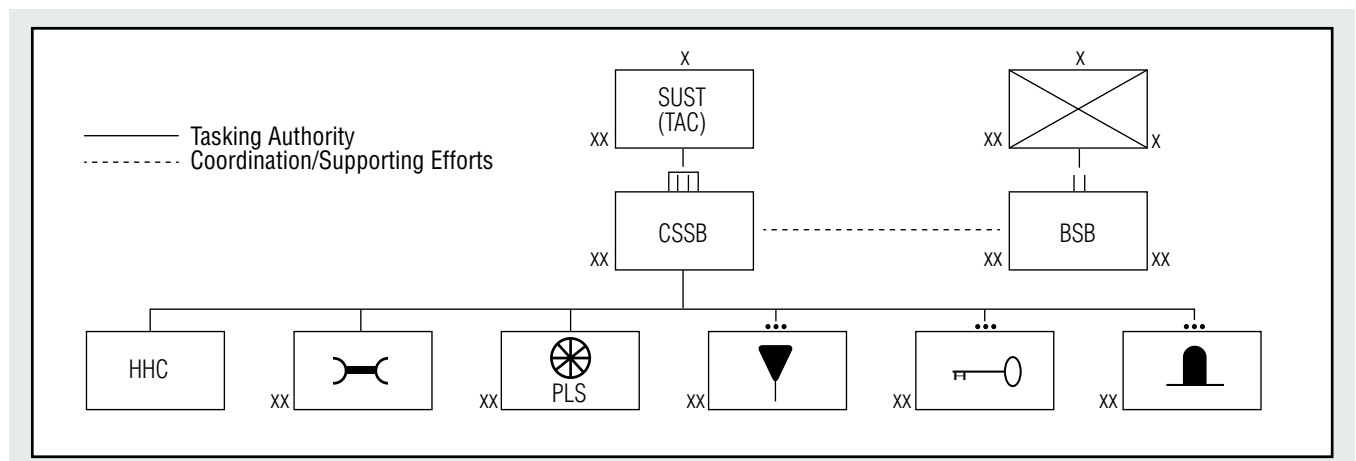
CSSBs are available throughout the active Army,

Army National Guard, and Army Reserve formations, so they provide an opportunity to exercise the integration of multiple modular units into a task force, which is a requirement particular to EAB logistics formations. An appropriately task-organized CSSB will require a higher headquarters package responsible for providing mission requirements, teaching, mentoring, and assessing. A sustainment brigade tactical command post (TAC) can fulfill this need and certify company and platoon teams for their assigned missions.

The skill sets and depth of function for the TAC to exercise mission command does not require an entire sustainment brigade headquarters. Rather, a TAC should be composed of multitasked special teams to synchronize support requirements, teach and mentor key positions, analyze sustainment operations, and produce operation orders. The TAC will synchronize efforts with the rotational BCT, the JRTC operations group, and contract support personnel.



Above, this chart depicts the task organization of Task Force Sword during JRTC Rotation 11–09. In this organization, the quartermaster supply platoon falls under the headquarters and headquarters company. The organization also includes a laundry and bath company, transportation company (palletized load system [PLS]), and maintenance company. Below is the proposed task organization of a sustainment brigade tactical command post with a subordinate CSSB task force. The units on the lowest tier of the chart (from left to right) are a headquarters and headquarters company, maintenance company, transportation company (PLS), petroleum platoon, quartermaster supply platoon, and an ammunition platoon.





514th Support Maintenance Company Soldiers practice recovery operations at the Joint Readiness Training Center in August 2011. (Photo courtesy of the 514th Support Maintenance Company)

The JRTC rotation should also serve as a training event exercising sustainment brigade support functions. An ideal arrangement is to have a sustainment brigade exercising mission command over the CSSB's supporting maneuver and advisory forces during the rotation. The challenge will be to align multicomponent EAB logistics units with deployment and availability timelines. As this concept evolves, it is imperative to start scheduling EAB units on the CTC patch chart. (A patch chart is a tentative schedule of when units will attend training.)

CSSBs can benefit greatly from participating in CTC rotations. EAB units can gain needed and valuable experience from providing tactical support during rotations. BCTs and joint forces will also benefit from being the supported units on the battlefield. Keys to moving forward are designing the CSSB composition for the CTC rotations. Stressing EAB capabilities through CTC opportunities will expose requirement gaps typically not found at home station. EAB units will have the opportunity to exercise and improve competencies

that are currently only tested during deployments.

Considering the reduction in combat deployments, the lessening reliance on contract support, and the need to refine EAB units for the full spectrum of operations, CTC rotations are the best opportunity for providing premier training for unit and team certification. As our logistics leaders and Soldiers, become more flexible, adaptive, and creative in problemsolving, CTC opportunities must be maximized. JRTC rotations provide the training required for certifying EAB units' proficiency. Additionally, rotations will continue to shape modular Army logistics units for success.

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Medical Logistics Support to Iraq: The End of an Era

The lessons learned in drawing down medical logistics support in Iraq must be remembered in drawing down medical logistics support in Afghanistan.

By Lieutenant Colonel David L. Sloniker, Major Peter A. Ramos, and Major Brian J. Wallace

Since its inception in 2003, the United States Army Medical Materiel Center–Southwest Asia (USAMMC–SWA) (Provisional) has been the tip of the spear for the rapid infusion of medical supplies and equipment into Iraq and Afghanistan. In addition to medical materiel storage, distribution, and medical equipment maintenance, USAMMC–SWA provides technical and functional medical logistics expertise to all military forces throughout the U.S. Central Command (CENTCOM) area of operations (AOR). USAMMC–SWA is pivotal in establishing, maintaining, and retrograding medical materiel within the supply chain system. Nine years of continued medical supply chain refinement have come to a close in Iraq, but the lessons USAMMC–SWA has learned can be applied to the operation in Afghanistan as it begins to downsize.

In the Beginning

USAMMC–SWA was established to serve as the single integrated medical logistics manager (SIMLM) for the CENTCOM AOR in support of Operations Enduring Freedom and Iraqi Freedom (OIF). CENTCOM named 3d Army/Army Central as the SIMLM to support the other armed services by taking operational responsibility for medical logistics, developing a health service logistics support plan, and requesting forces as needed. In 2006, USAMMC–SWA was designated as the theater lead agent for medical materiel (TLAMM) as recommended by the Defense Logistics Agency with concurrence from the Chairman of the Joint Chiefs of Staff.

In the beginning, USAMMC–SWA Soldiers deployed to Camp Doha, Qatar, from the 6th Medical Logistics Management Center, Fort Detrick, Maryland; the 388th Medical Logistics Battalion, Hayes, Kansas; and the 424th Medical Logistics Battalion, Pedricktown, Pennsylvania; alongside Air Force (USAF) logistics and medical maintenance teams in support of Air Force Central's (AFCENT) Patient Movement Item (PMI) Program.

USAMMC–SWA's mission is to provide, project, and sustain medical logistics support and solutions across the full spectrum of military healthcare missions throughout the CENTCOM AOR. Over the years, the force structure has

changed to include contractor support, but the mission has stayed the same.

Materiel Support

At the height of OIF, USAMMC–SWA supported customers with more than 720 separate Department of Defense activity address codes across Iraq. It shipped more than 2,950 tons of materiel valued at \$220 million to 9 aerial ports of debarkation annually.

USAMMC–SWA originally used the Theater Army Medical Management Information System (TAMMIS) to order and process class VIII (medical materiel) requests. This single server based architecture worked well but lacked an enterprise view of medical materiel support requirements.

In 2009, the Army Medical Department deployed the Theater Enterprise Wide Logistics System (TEWLS) to USAMMC–SWA. TEWLS provides an enterprise view of the medical materiel supply chain and links the strategic provider with the operational TLAMMs (the USAMMCs in Europe, Korea, and SWA). By providing a picture of the supply chain from top to bottom, TEWLS made it possible for USAMMC–SWA to continually adjust to the ever-changing conditions associated with the force drawdown in Iraq.

Unlike TAMMIS, TEWLS provides single-point data entry and immediate data sharing across the entire medical logistics enterprise from the national level to the TLAMMs. It supports theater-level medical materiel management, warehousing, and distribution functions as well as medical assemblage creation, build, and management.

Live, complete, real-time data can be viewed from any TEWLS-enabled computer terminal. This enterprise view allowed planners and executors a common view of medical materiel flowing into Iraq and allowed materiel managers to gradually reduce the supply chain requirements as units and personnel departed. USAMMC–SWA also furnished Comprehensive Health Services with TEWLS historical demand data that aided the contractor in planning for known materiel transitions and providing continuity of support to the Department of State mission in Iraq.

Biomedical Maintenance

USAMMC-SWA in partnership with the U.S. Army Medical Materiel Agency's (USAMMA) Forward Repair Activity-Medical (FRAM) provides expert medical maintenance in the highly technical areas of pulmonary equipment, imaging equipment (x ray and computed tomography (CT) scanners), and laboratory test equipment such as chemistry analyzers and microbiology units.

The FRAM team is not designed as the first level of support. USAMMC-SWA's standard operating procedure designates the maintenance activity on the ground as the first level and the primary source for installation scheduled and unscheduled service. Several other levels of support are used before requesting support from the FRAM. These support options vary depending on each unit's function and location. The FRAM team from USAMMA's depots brings forward the highest level of support possible. The FRAM team and USAMMC-SWA's biomedical equipment technicians created a powerful lineup to send forward into different countries in the CENTCOM AOR.

In the OIF drawdown, FRAM teams conducted more than 500 man-days of repair work or training on specific medical repair procedures for forward biomedical equipment technicians forward. The FRAM team was tasked with disestablishing CT scanners, packing some of them for shipment back to the depots, and assisting in the trans-

fer of others to the Department of State's prime medical provider contractor as it established diplomatic support hospitals across Iraq.

PMI Program Support

PMIs are designated medical supplies and equipment that are required to move a patient during medevac or aeromedevac. USAMMC-SWA, in close coordination with the U.S. Transportation Command (TRANSCOM) Surgeon's Office, USAF Materiel Command Surgeon's Office, CENTCOM J-4 Joint Medical Operations Cell, and the AFCENT Surgeon's Office, provided PMI support to 10 different locations before the closure of the Iraqi theater of operations. The USAMMC-SWA PMI cell manager closely monitored PMI requirements and ensured that PMI support items were not erroneously transferred to the Department of State's prime contractor. By doing this, 391 items valued at \$3.9 million dollars were recovered for reuse in the global PMI system.

USAMMC-SWA PMI logisticians effectively maintained accountability of the equipment used throughout the CENTCOM AOR by using the PMI Tracking System (PMITS) to track the storage and movement of the items by scanning PMI in and out of service. USAMMC-SWA's biomedical maintenance technicians provided the direct support consisting of repair, calibrations, and services for

An Airman works on patient movement item equipment at the United States Army Medical Materiel Center-Southwest Asia.





Employees pack items for shipment at the United States Army Medical Materiel Center–Southwest Asia.

the AOR. The PMI team provided training to familiarize units and leaders with the PMI program and PMITS application to ensure that medical leaders understood how to correctly employ the PMI program.

As the Iraqi theater closes, USAMMC–SWA has become the PMI Center of Excellence in the AOR for both equipment (such as ventilators, suction devices, and patient monitoring systems) and durable items (such as litters, straps, and pads). Customers can put both types of equipment in one request. This practice, along with positioning PMI equipment at two forward medical logistics companies in Afghanistan and maintaining direct support for biomedical maintenance, ensures that USAMMC–SWA can provide responsive dedicated support throughout the CENTCOM AOR.

Supply Chain Distribution

Over the past 9 years, USAMMC–SWA delivered to as many as nine logistics hubs, including those at Balad Airbase, Mosul, Baghdad, Tallil Airbase, and Al Asad Airbase. These logistics hubs and other locations were essential to the hub-and-spoke network required to support troops at less developed locations that did not have fixed-wing aerial ports for delivery. However, as drawdown operations and troop reductions occurred, USAMMC–SWA still delivered more than 760,000 pounds of general medical cargo, more than 1,200 cold chain (temperature controlled) items, and 850 hazardous material shipments. Shipments were delivered using both commercial carrier and military airlift modes of transportation.

With close proximity to the USAF aerial port at Al

Udeid Air Base, USAMMC–SWA capitalized on the opportunity to integrate the use of Air Force 463L cargo pallets to move bulk shipments into the major hubs in Iraq located at Balad and Baghdad because these locations received daily ring route flights from Qatar. A medical logistics company (MLC) and its forward distribution teams (FDTs) received these bulk shipments and redistributed them to support units in and around their locations.

The combination of USAMMC–SWA’s capability to “pure pack” shipments (consolidate a single customer’s supplies on one pallet) for MLC and FDT customers and their forward distribution capability (intratheater relationships with commercial and military distribution nodes) expedited time-sensitive supplies to outlying locations.

Commercial carriers served a pivotal role in the USAMMC–SWA supply chain. During times of intense fighting and numerous casualties, cost efficiencies became less important than delivery speed. Commercial airlift under TRANSCOM authority provided Medical Air Tender to move materiel into Iraq and deliver it to the customers’ locations within 96 hours of pick up from USAMMC–SWA. Commercial carriers were depended on not only to fly supplies into theater but also to provide intratheater air and ground transportation to locations that traditional military assets could not reach as quickly. Commercial carriers planned and coordinated local-national distribution assets from the time cargo was picked up from USAMMC–SWA, thereby expediting ground movement once it arrived in theater. However, this expedited transportation method was expensive. During the height of conflict and troop surge in Iraq,

commercial transportation costs for medical supplies averaged \$1 million to \$2 million a month.

Although standard ship-to times were established to support medical units in Iraq (96 hours for general cargo and 72 hours for cold chain cargo), the transportation mode varied depending on conditions on the ground. As drawdown operations became accelerated at the onset of 2011, and troop strength and casualties decreased, speed was no longer as important as cost efficiency.

In mid 2011, bulk cargo reverted to military airlift, and commercial carriers were relied on solely for cold chain movement (commercial carriers had invested in refrigerated trucks) and transport to far forward locations with decreased military transportation assets. The distribution modes reverted to presurge commitments of 70 percent military airlift and 30 percent commercial carrier.

Distribution Challenges

As the force drawdown continued, several distribution challenges developed—some mimicking the challenges experienced during the build-up years of the campaign. The early redeployment and lack of a backfill for the MLC degraded the ability of separate units to have a sole point of contact in theater for medical logistics support. As a result of this course of action, USAMMC-SWA became the supply support activity for Iraq, and an ad hoc hub-and-spoke concept developed, resulting in second- and third-order effects. Brigade medical supply offices assumed the MLC's roles and responsibilities and became regional support organizations instead of being solely brigade focused. They were managing more external customers, which meant more supply and storage requirements and accountability. The brigade supply medical offices were further relied on to forward supplies outside of their traditional boundaries and supply lines.

Additionally, as bases began to downsize for closure, commercial carriers who had established customer service infrastructure on the bases were being asked to leave early and to turn over space. This resulted in either a stop of customer support to that location or longer shipping times because supplies had to wait outside of the gate for unit escort. Decreased commercial carrier support forced medical support units and sections to coordinate external distribution through traditional military lines of communication, which was difficult because units had become so dependent on commercial carrier practices.

Commercial carriers loaded the cargo at the customer's location, processed the paperwork, and provided an easy method of tracking (web-based tracking site), which required no specific username access or passwords, just the shipment airway bill. (The shipment airway bill provides the shipper with a digital signature from the customer on the other end.)

In the absence of the commercial carrier, units had to conduct distribution planning with the local movement control team (MCT), deliver the supplies to the MCT

cargo holding yard, and conduct verbal reconciliations with supported customers to track shipment receipt—all of this as theater infrastructure was decreasing.

The takeaway to keep in mind for future downsizing operations is that leaders need to ensure that the young logisticians are knowledgeable of the practices of traditional military distribution and lines of communication when faced with the absence of commercial distribution infrastructure.

USAMMC-SWA will continue to support the CENTCOM AOR by providing both medical materiel and biomedical maintenance support medical logistics sustainment for theater security cooperation missions, Army pre-positioned stocks 5 reconstitution, ships afloat conducting counterpiracy operations, and units in Afghanistan. As units in Afghanistan need to evacuate medical equipment, inventory excess materiel, or receive training on medical logistics operations such as cold chain management, USAMMC-SWA's will stand ready to support.

USAMMC-SWA's support to the CENTCOM AOR will continue because our environment is uncertain and unpredictable. Senior leaders want the flexibility to respond to any unforeseen crisis, and we have a perpetual commitment to the region. USAMMC-SWA will restructure as it has done since its inception in 2003 in order to maintain much needed medical logistics footprint in an ever-changing and volatile region of the world.

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The 204th BSB's Logistics Training Advisory Team in Afghanistan

The 204th Brigade Support Battalion's logistics training advisory team established several programs to help them train Afghan Uniformed Police in logistics operations.

By First Lieutenant Adam D. Stear

The logistics training advisory team (LTAT) mission within the 204th Brigade Support Battalion (BSB) in Afghanistan began as an answer to a problem identified while observing the security forces assistance teams' (SFATs') missions. SFATs did not have the logistics experience necessary to meet all of the training needs of the Afghan National Security Forces (ANSF).

Partnering with ANSF has become more than simply teaching the aspects of combat and policing to Afghan National Army and the Afghan Uniformed Police (AUP) units respectively. The partnering mission has expanded past training for tactical operations and now includes training to support tactical operations.

The 204th BSB recruited the expertise of one of its company commanders, who had successfully served in Iraq on a military transition team tasked to ensure that the Iraqi police were self-sustaining and effective on all levels, including logistics.

About the Team

The BSB assembled a small team of logistics subject-matter experts (SMEs). The initial team consisted of nine personnel: an officer-in-charge, a noncommissioned officer-in-charge, a maintenance adviser, a fuel adviser, a supply adviser, a medical adviser, a communications adviser, and two logistics advisers. The SMEs were recruited from four different BSB companies. Additions to the team were made later in the deployment bringing the LTAT personnel to 13 SMEs.

Sustainment Excellence Day

The 204th BSB LTAT focused on the AUPs because of the close proximity of Forward Operating Base (FOB) Walton, where the 204th BSB was located, to Kandahar City, where most of the AUPs resided and worked.

The idea was to familiarize the AUPs with vehicle and weapons maintenance contractors who could help them maintain their equipment and, in turn, their combat effectiveness. The LTAT planned training days each week, on which different police substations (PSSs) would come to

FOB Walton to receive training in basic logistics-related tasks while their weapons and vehicles (primarily AK-47s and Ford Rangers) would receive a technical inspection and service. When the AUPs were finished with their training, they would depart with their weapons serviceable and with new fluids and filters in their vehicles. Once the plan was implemented, this became known as a sustainment excellence day (SED).

Partner Development Training

As the SEDs progressed, another need was identified. The Army traditionally assigns SME "partners" to the AUP units to teach them how to be effective police. However, these partners focused very little on logistics operations (the best practices for requesting, receiving, issuing, tracking, and storing materiel), which are important in enabling the AUP to become self-sufficient. A partner's primary mission is to ensure that the AUP units are training and learning police tasks and tactics, and partners often overlook training in logistics.

The LTAT identified the need for basic education in sustainment for the International Security Assistance Force (ISAF) partners and created a class, called Partner Development Training (PDT), to teach the ISAF partners about AUP logistics. This class provided participants with a basic knowledge of logistics and answered related questions that came up for the students in the field while they worked with AUPs. PDT, by design, was a temporary solution to the lack of Afghan logistics experience within the ISAF partners' ranks. Once key PSS partners attended PDT, it transitioned from a once a week operation to an as-needed class that the battlespace owners could request for new partners or other ISAF personnel who needed to receive a class in AUP logistics.

Site Assistance Visits

In order to measure the effectiveness of the training efforts from SED and PDT, the LTAT began coordinating visits to the AUP PSSs throughout Kandahar City. These site assistance visits (SAVs) eventually became a joint

effort between the SFAT of the Provincial Headquarters (the PSSs higher headquarters) in Kandahar City and the LTAT. The LTAT linked up with the Provincial Headquarters SFAT when it visited each PSS and talked to the PSS chief about logistics operations in order to identify weaknesses in the training given through SED and PDT. The idea was to identify “kinks in the armor” in order to make the LTAT training more effective and relevant.

Logistics SMEs in the Provincial Headquarters SFAT

The 204th BSB LTAT also deliberately placed other personnel to assist the Provincial Headquarters SFAT. Four logistics SMEs were placed at the Provincial Headquarters. Two noncommissioned officer (NCO) SMEs were partnered with the Afghan logistics personnel at the Provincial Headquarters. These SMEs provided much needed assistance to the Afghan logistics personnel responsible for supplying all of the AUPs in the Kandahar City area of operations.

Another NCO was sent to the Provincial Headquarters to assist with property tracking and accountability. This NCO was a key player in accounting for equipment that was on the property book. Once the Provincial Headquarters had established property accountability, it created and reinforced the property accountability standard for all

PSSs under it. Finally, a SME from S-6 was sent to the Provincial Headquarters to ensure that it had continuous communications. With the SMEs in place with the Provincial Headquarters SFAT, Kandahar City AUP logistics was setup and on the road to success.

Results of Lines of Effort

The results of the SED, PDT, SAV, and the Provincial Headquarters SFAT lines of effort were groundbreaking for the 204th BSB LTAT. SED was very beneficial to the battlespace owners because it was difficult for the ISAF partners to coordinate deliberate training opportunities with the AUPs, who often experienced a high operating tempo. SED took the time-consuming preparation factor out of training basic logistics tasks by researching, developing, and delivering effective training. The variety of classes that the LTAT facilitated through SED included vehicle preventative maintenance checks and services (PMCS), generator PMCS, basic first aid, basic marksmanship, AK-47 PMCS, improvised explosive device (IED) familiarization, counter-IED training, mine sweeping training, basic driver’s training, and basic radio communications. This gave the AUPs and ISAF partners a wide range of classes to choose from to meet their training needs.

Contractors from Alpha Omega Services provide basic maintenance for Afghan Uniformed Police (AUP) weapons during a sustainment excellence day. They also conducted basic classes for the AUPs on how to properly maintain their weapons.





During “sustainment excellence day” training, two local contractors conduct basic maintenance checks on an Afghan Uniformed Police vehicle.

To go a step further, the LTAT identified three classes from SED as classes the AUPs could use to practice training other AUPs: basic first aid, vehicle and generator PMCS, and basic radio communications. With those classes, the LTAT identified AUP instructors when they arrived for SED training. The AUP instructors were given the opportunity to teach in front of their subordinates to reinforce the knowledge and gain the experience of instructing. The prerequisite for instructors was either that they had been to SED before or they had been to the AUP NCO Academy. Some PSS chiefs also insisted on being instructors, which the LTAT enthusiastically welcomed and encouraged.

Between August 2011 and March 2012, the LTAT conducted SEDs at FOB Walton for 894 AUPs. Of those, 500 were taught by AUP instructors. The LTAT inspected or repaired 468 weapons and serviced 135 vehicles (including some high-mobility multipurpose wheeled vehicles). All AUPs participated in the vehicle PMCS and first aid classes, 534 participated in the basic radio communications class, 270 participated in the AK-47 PMCS class, 497 participated in the small arms range, 405 participated in counter-IED training, and 23 participated in mine sweeping training.

Operational readiness rates remained steady during the SED time, ranging from 94.3 percent to 98.8 percent for AK-47s and from 87.7 percent to 89.7 percent for Ford Rangers. The Provincial Headquarters also worked diligently with the PSSs and their higher headquarters to increase the on-hand numbers for AK-47s (in addition to

other AUP weapons) and Ford Rangers to the authorized amounts. AK-47s on hand increased from 1,373 to 1,590 and Ford Rangers on hand increased from 135 to 156. The Provincial Headquarters also issued several new Ford Rangers to the PSSs, increasing those numbers further.

The PDT results were a challenge to measure. However, the LTAT was able to train 46 ISAF partners from 12 different PSSs and multiple ANSF representatives from the battlespace owners. The class was a great asset to incoming personnel who were unfamiliar with the AUP logistics system. It also familiarized the ISAF partners with different Afghan Ministry of Interior forms they would be required to use for logistics transactions within the PSSs as well as through the Provincial Headquarters. PDT established a baseline for Afghan logistics for the partners who had little experience with logistics.

SAVs provided valuable insight and quality control for the products and efforts the 204th BSB LTAT created to assist in filling the gaps within AUP logistics in Kandahar City. It also was beneficial to the Provincial Headquarters personnel because it gave them an opportunity to evaluate and assist their subordinates with tactical and logistics standards and operations. The SAVs typically rotated through 2 of the 17 PSSs within Kandahar City each week.

Push Versus Pull Logistics

Challenges lie ahead with regard to partnering ISAF with ANSF in order to help the Afghans become self-sufficient. Through partnering, ISAF has been leading

ANSF away from its prior “push” system of logistics that it learned from the Russians during their time in Afghanistan. In a push system, the higher headquarters receives the bulk of supplies and then distributes items based on what it decides its subordinates need.

ISAF has introduced and is continuing to assist in establishing a “pull” system of logistics. In a pull system the subordinate units send requests for supplies to higher headquarters in order to pull supplies from their higher unit. The higher unit must track, meet, and forecast for the logistics needs of its subordinates.

Establishing a pull system has been difficult to achieve because of corruption that sometimes exists in which supplies are hoarded and used for personal or professional gain. SFAT 10 and the 204th BSB LTAT have worked to show the AUPs at the Provincial Headquarters how to accurately track and forecast (based on consumption rates) through methods and techniques currently used by ISAF. One example of a line of effort is fuel consumption tracking. It begins at the lowest level with the AUP driver. Each driver keeps a mileage log and tracks fuel for his assigned vehicle. The usage log is turned into the PSS logistics officer who compiles the information from every driver. This information is submitted to the Provincial Headquarters monthly for fuel accountability. By having the consumption reports, the Provincial Headquarters AUP logistics officer can then accurately track and forecast fuel for that PSS.

“Buy In” Factor

The “buy in” factor is crucial for the Afghan populous to prosper after ISAF decreases its presence in Afghanistan. The Afghans need to accept ownership of and responsibility for the systems ISAF has been teaching them; they need to take pride in their systems. The systems that ISAF is trying to establish within ANSF are critical for its success. Continued assistance is needed, but only until ANSF is able to take the lead in every aspect of its society.

The efforts that the LTAT has made to help the AUPs become self-sustaining are based on a simple principle: Teaching the Afghans to be self-sustaining will serve them longer than if we sustain them. The team has made efforts toward this principle by teaching AUPs the basic knowledge needed to sustain their equipment. The LTAT facilitates classes (to give them the knowledge) and links the AUPs with contractors who service their equipment (to give them a way to sustain their equipment). This principle is the doctrinal cornerstone to partnering that leads the way to the ANSF becoming self-sustaining.

Security of ISAF and ANSF

When the LTAT hosts the ISAF partners and their ANSF counterparts at FOB Walton for training, it accepts a certain level of risk for the opportunity to increase the AUPs’ professionalism. ISAF and ANSF have

been attacked by enemies disguised as ANSF personnel. Before AUPs are allowed on FOB Walton, their partners must enter them into the Biometrics Automated Toolset (BAT) system at least 1 day before the training. When they arrive at FOB Walton’s entry control point, AUPs also go through a screening process involving retinal scans that are conducted using the Handheld Interagency Identity Detection Equipment (HIIDE). The HIIDE retinal scan recognizes an enemy screened at the entry control point if he has been entered into the BAT system from a previous crime. The BAT and HIIDE systems are the primary tools used to defend against attacks that would significantly undermine the LTAT efforts to better facilitate and grow partnering relationships between ANSF and ISAF.

With the ISAF decrease drawing near, ANSF logistics needs more effort. Although a logistics focus is present, it needs to become a more deliberate operation for commanders. ISAF partners that are entering Afghanistan need to be trained and familiar with the Afghan logistics system. They also should receive cultural awareness training before they are partnered with ANSF. It is important for incoming partners to establish a good relationship with the ANSF with whom they work.

SFATs with embedded logistics SMEs placed at key Afghan logistics hubs (such as the Provincial Headquarters) are crucial to reinforcing logistics tracking and forecasting. The SMEs would then encourage the Provincial Headquarters AUP logistics officers to reinforce their expectations to the subordinate PSSs through SAVs.

Continuing LTAT-type efforts through consolidated training by conducting SEDs will show the AUPs how to save time and train effectively and efficiently. The ultimate goal of SED should be that either the AUPs take the class format and establish it at their PSSs, the AUPs take over leading training at a consolidated training area, or a combination of both.

With the length of deployments transitioned to 9 months and force reductions through 2014, little time is available to ensure that ANSF will be self-sustaining when the majority of ISAF departs. However, the LTATs and SFATs have a plan for preparing the Afghan populous as well as the ANSF to function on their own and are working toward that end.

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Reverse Logistics Operations in Afghanistan

While easy to overlook and often difficult to implement, reverse logistics operations are key to maintaining efficient living and work areas at combat outposts and forward operating bases.

By Captain Christopher A. Donnahoe



After 10 years at war in Afghanistan, many Soldiers agree that logisticians are phenomenal at pushing “beans and bullets” and other supplies needed for force sustainment. With the force surge in Afghanistan, the amount of supplies pushed forward from each brigade combat team is astronomical, estimated at approximately 1 million tons of supplies per month. Since such a significant amount of supplies is pushed to the small combat outposts (COPs), one might wonder what happens to the residue and unserviceable equipment. Many units are burdened by the question of how to dispose of equipment, such as unserviceable refrigerators, heating and air-conditioning units, air compressors, and even battle-damaged vehicles. The method used to properly dispose of these materials is reverse logistics.

Reverse logistics systems are vital to the proper removal and disposal of residue and unserviceable items. Reverse logistics is a doctrinal supply chain term describing how byproducts and other materials are returned through the original supply chain in order to recycle, refurbish, or ensure proper disposal. Army Regulation 711-7, Supply Chain Management, describes reverse logistics as “the process by which a product is returned to some point in the distribution system for credit, reworking, recouping, restocking, or disposal.”

The intent of this article is to highlight the reverse logistics processes currently used and explain why they deserve more attention by logisticians throughout the Army and all of the other organizations directly involved with the supply chain in Afghanistan.

Important but Difficult to Execute

The commercial retail industry is increasingly focusing on reverse logistics in order to trim costs, drive profit, and increase customer service. The Reverse Logistics Executive Council defines reverse logistics as “the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal.” From this definition, we can clearly relate this to Army logistics and how we can begin setting up the systems to facilitate retrograde operations. [The Reverse Logistics Executive Council is a nonprofit professional organization of manufacturers, retailers, and academicians whose purpose is to develop industry standards for best practices for reducing costs for consumers, retailers, and manufacturers.]

Some benefits of reverse logistics are a cleaner environment and recycling or reallocation and potential financial recovery of equipment. According to the Defense Logistics Agency (DLA) website, in fiscal year 2008, the DLA disposition services served more than 56,000 military units and received more than 3.5 million items. Within disposition services, DLA first offers the items to the Department of Defense (DOD) for reutilization. This amounted to \$2.2 billion worth of property being reutilized in the system in fiscal year 2008.

If reverse logistics is so important, why is it not focused on



A transportation platoon from D Company, 1st Battalion, 506th Infantry Regiment, loads retrograde items for transport. Through detailed coordination, retrograde operations can be conducted without hindering the unit's ability to provide support. (Photos by CPT Christopher A. Donnahoe)



Before a means to remove scrap items was established, items would pile up, decreasing work space and creating a hazardous work environment.

more? Quite simply, it is not the focus because it does not concern moving “beans and bullets” to the warfighters on the front lines. The warfighter’s mission in Afghanistan is to take the fight to the enemy. The logistician must ensure that the warfighters have the supplies needed to accomplish their mission.

With daily logistics pushes to the outlying COPs, air and ground assets are routinely maxed out. Therefore, dedicated retrograde channels may not be effectively included in the overall logistics plan. However, this does not mean that reverse logistics needs to stop and allow the materials to accumulate to unmanageable stockpiles. In fact, this is exactly why logisticians must effectively manage their current supply chains: to minimize the amount of retrograde items collecting at all locations throughout the battlespace.

It is often said that we have not been in Afghanistan for 10 years; we have been there for a year 10 different times. This statement illustrates that continuity is a problem in logistics operations and that we should consider continuity-based systems with all operations.

Organization Improves Achievability

As the law of gravity says what goes up must come down, the law of logistics could state what goes out must come back. This sounds simple, right? With a well organized plan, it can be this simple. Although you may not be able to retrograde all items in one big push as you might wish, moving a little at a time is more effective than moving nothing at all. These small pushes, usually through rotary-wing operations, are regularly called “opportunity moves.”

Establishing retrograde lanes at the helicopter landing



zones has proven to be a great catalyst for these movements. Using helicopter landing zone retrograde lanes may assist units in two ways. First, it identifies requirements for retrograde, enabling units to be more proactive in submitting air movement requests and improving their visibility of materiel movement for planning. Next, it provides units with an organized management tool to ensure that no aircraft returns empty and wastes valuable resources.

Planning for Reverse Logistics

In the same way that units report their requirements for supply, they also should report their requirements for retrograde. The requirements then become the logistician’s goals, and systems are set up in order to meet the requirements. As supplies are pushed out to the COPs, by either ground or air, planning must take place in order to meet forward and reverse logistics goals. For example, if an airframe returns empty, then neither goal has been met and the logistician’s problem at the COP continues to grow. Coordination is paramount in meeting both goals and more likely even more coordination is required in order to perform retrograde operations. Warfighters are focused on their mission, therefore a dedicated reverse logistician may be required in order to maximize returns and facilitate coordination of such operations.

During Operation Enduring Freedom 10–11, we at Task Force Currahee established the following goals in order to



When retrograde items are identified and a transportation movement request is submitted, the transportation unit can ensure that forward and reverse logistics requirements can be fulfilled. In this photo, Soldiers secure retrograde items for transport.

meet requirements for retrograde:

- Properly dispose of all scrap metal and wood.
- Properly dispose of all DLA disposal items.
- Properly dispose of all hazardous materials.

These goals were identified with the intent of setting up self-sustaining systems that would last well after our tour ended in order to ensure continuous operations.

Identifying Excess Items and Making a Plan

As the reverse logistics officer for Task Force Currahee, I visited many locations throughout Regional Command East to help units identify items for retrograde and to teach them how to package the items for movement and submit air movement requests. The warfighters were busy with their mission, and many did not know what movement assets were available to them, let alone how to take full advantage of these assets. I continually revisited these sites to understand their problems with the systems and work with them to improve the processes in order to make them as simple as possible. Removing the excess items helped improve the units' pride and ensure that hazardous working environments were minimized.

The COPs identified a buildup of scrap metal, unserviceable equipment, and battle-damaged equipment. Movement from COPs to hubs, like Forward Operating Base (FOB) Sharana, Afghanistan, was limited because of the mountainous terrain, enemy activity, and limited



As units began to use the retrograde systems, they were able to better organize their work areas and increase their available workspace.

assets. Retrograde movement was a slow process that had to be managed daily in order to minimize the buildup of unserviceable items and maximize asset use as much as possible.

With 22 COPs in the battlespace, the amounts of retrograde items to consider were significant. Without a clear and defined process to facilitate the movement from the COPs to the hub and onward, the hub would inevitably become a dumping ground. Thus, by having defined the goals and established self-sustaining systems at the hub, we eliminated the problem before it became overbearing. We addressed our goal of properly disposing of scrap metal and wood by taking our problem to the contractors on FOB Sharana and asking how they could help. The contractor placed 10-foot containers in the unit areas and emptied them daily.

Through the contractor, we provided the units with a catalyst for cleaning up their areas and mitigated the potential for units to improperly dispose of equipment away from their areas. This system exceeded our expectations in the first 2 weeks of service with 20 strategically positioned containers removing more than 150,000 pounds of materials.

Getting Materials to Bagram Airfield

To dispose of all unserviceable items that were not required to be turned in to the supply support activity, we first had to identify how to properly dispose of these items. Since no system was set up on FOB Sharana, we had to create a system that would bridge the gap to the nearest disposal center at Bagram Airfield (BAF). With more than 100 miles between the locations, we had to identify a secure, no-fail way to move the materials to BAF.



A transportation platoon from D Company, 1st Battalion, 506th Infantry Regiment, uses the well-organized retrograde lanes at a forward operating base to ensure that no truck returns empty, thus increasing transportation asset efficiency and removing the growing amount of retrograde items.

The DLA personnel at BAF informed us of the items that would be accepted, the configuration in which the items would be accepted, and the proper paperwork needed.

We then worked with the Surface Deployment and Distribution Command to allocate containers to transport the materials to BAF. The containers were placed in the central receiving and shipping point yard in a dedicated retrograde lane in order to facilitate loading them onto combat sustainment support battalion (CSSB) convoys traveling to BAF.

Coordination with the CSSB is imperative and should be initiated as soon as possible in order for the CSSB to coordinate assets to backhaul the container(s). In some cases, items do not require an escort for transport to BAF DLA; these containers may be loaded onto host-nation trucks and sent directly.

Although we allocated many containers directly to the unit for mass loading, units normally scheduled turn-in appointments during which the unit's items were loaded in the central receiving and shipping point yard, relieving the unit of any further coordination. To determine if we could push the containers to a location other than BAF, we addressed movement back to Kuwait. However, we discredited this idea because we would lose security on the container and Kuwait services were inundated with materiel from downsizing operations in Iraq.

Hazardous Materials Retrograde

To address our goal to dispose of all hazardous materials (HAZMAT), we worked closely with the contracted FOB Sharana HAZMAT team to better understand how

we could facilitate the turn-in procedures for units. After much discussion with units on the FOB, it was clear that an education process had to be set up.

With that in mind, we developed a training class that would address the HAZMAT turn-in process and inform units of the systems in place to assist them with proper disposal of their retrograde items. After five classes, we learned that units had been waiting for this for a long time. Soldiers do not like their areas to become hazardous nor unkempt; moreover, they want them to be organized and neat. Thus, we had great success in setting up systems to facilitate cleaning up their areas and improving their positions.

The following are key points and recommendations identified throughout the process of setting up systems for reverse logistics operations:

- ❑ Assign a reverse logistics officer-in-charge and non-commissioned officer-in-charge.
- ❑ Train to understand the reverse logistics process.
- ❑ Assess the FOB for scrap wood and metal bins, and emplace them throughout the FOB.
- ❑ Travel to COPs to assist units in establishing systems for reverse logistics operations.
- ❑ Train all tenant units on DLA and HAZMAT turn-in procedures.

As logisticians, we must consider all phases of moving supplies and materials to the warfighter and ensure that all missions are executed by setting up systems and coordinating operations that will facilitate both forward and reverse logistics. In doing so, we will stop recreating the wheel year after year and ensure that we have a positive effect on all of our locations and on the Afghan environment. Furthermore, we must ensure that items that may be used elsewhere are effectively reallocated; the impact will be huge. All it takes is a conscientious mind to plan, coordinate, and maximize the total supply chain. In doing so, we will improve the quality of life for our Soldiers, promote sustainability for the battlespace, and prepare follow-on units for success with a functional sustainment system and operating bases that are free of clutter.

The actions taken to establish reverse logistics described in this article are the minimum needed to get the program established. The more detailed the plan, the more efficient the logistics operations will be.

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GCSS–Army Materiel Management

By Chief Warrant Officer 3 Lasandra A. Talleyrand

In August 2011, the 916th Support Brigade received training from Global Combat Support System–Army (GCSS–Army) master trainers as part of the ongoing operational test of GCSS–Army. This training prepared the support brigade to assume sustainment brigade level materiel management functions for the 11th Armored Cavalry Regiment (ACR) at Fort Irwin, California. This article highlights some of the advantages of GCSS–Army over legacy systems.

GCSS–Army significantly departs from Standard Army Management Information Systems by providing one common platform to control an array of supply, maintenance, property book, financial, and task organization functions. The system uses best practices by focusing on materiel consumption and will not automatically order or reorder items not consumed.

The materiel management function in GCSS–Army, which is used to plan and procure materiel and resources to support the mission of supply support activities (SSAs) and customer units, has been reengineered to facilitate decisionmaking in lieu of data gathering.

One decision-support tool is the “overdue delivery” tool, which helps to manage overdue deliveries by reengineering the old receipt process. Materiel managers can reconcile overdue deliveries daily, eliminating the need to enter and rework the same data in multiple systems.

Another tool that helps materiel managers support the SSA is planned delivery time analysis, which calculates customer wait time (CWT) and, more specifically, requisition wait time (RWT), by sorting and analyzing data by a single materiel, or stock, number. This is the first change to the process for calculating CWT and RWT in more than 30 years. (Before, the wait times for all receipts and requisitions were added together and divided by the number receipts and requisitions to achieve an average.) GCSS–Army allows the materiel manager to more precisely examine CWT and RWT through data analysis by materiel, weapon system designator, or source of fill. This helps materiel managers better procure hard-to-get parts for critical systems.

The SSA will continue to perform basic core functions such as receiving, issuing, and storing. However, GCSS–Army simplifies materiel management by integrating the SSA and its organizational levels (from the plant where the item is produced down to the individual SSA bin) into the same database. This eliminates the need for reconciliations, closeouts, backups, restores, transaction in-and-out processes, and availability file uploads performed daily, weekly, and monthly in the Standard Army

Retail Supply System. Eliminating these multiple tasks makes materiel management simpler and timelier.

Enterprise application software, including that used by GCSS–Army, has changed many naming conventions for supply terms and processes outlined in Army regulation. In legacy systems, a materiel manager worked on the Manager Review File (MRF) for customer units in order to pass a requisition to the SSA or out to wholesale. With GCSS–Army, the MRF is now known as the “release strategy.” In the release strategy, a large number of reason-referred codes are eliminated and only a select set of value-added filters are performed by materiel managers.

When a customer initiates a purchase request for a repair part against a work order, it first has to be approved by the unit budget officer and the brigade support battalion support operations materiel manager. Once the budget officer funds the request, it then becomes a purchase order and is sent to a sustainment brigade materiel manager for final review, approval, and release to the SSA or wholesale.

A purchase order only stops at the sustainment brigade materiel manager if it falls under one of the release strategy checks: high dollar, large quantity, specific material (watches and laptops), sensitive, acquisition/restriction type, expendable, durable and nonexpendable, or item category.

Understanding GCSS–Army, with all of the new terminology can be daunting. That is why GCSS–Army has an aggressive educational strategy and a growing website: <https://www.gcass.army.mil>. The website’s “Education Tab” offers web-based training, and there is an online user’s manual for materiel managers.

GCSS–Army is working well for the 916th Support Brigade and 11th ACR to enable a real-time, logistics common operating picture with reliable logistics information to enhance sustainment, readiness, and combat operations at the National Training Center.

Chief Warrant Officer 3 Lasandra A. Talleyrand is the senior supply systems technician for the Supply and Services Branch, 916th Support Brigade, Fort Irwin, California, and the Global Combat Support System–Army (GCSS–Army) Materiel Manager for the 11th Armored Cavalry Regiment. She holds a Bachelor’s Degree in Marketing from American Military University, and she is a graduate of Warrant Officer Candidate Basic and Advanced Courses.

CDFM, LSS, and the Future Resource Manager

Managing change can be a particular challenge for resource managers. Certified Defense Financial Managers can use Lean Six Sigma to help the military make necessary changes more effectively.

By Major Mark W. Lee

Major organizational change occurs when an organization changes its overall strategy for success, adds or removes a major section or practice, or wants to change the way it operates. It also occurs when an organization progresses through its lifecycle. For an organization to develop, it often must undergo substantial change at various points in its development. To accomplish this change, an organization needs a highly capable manager.

Certified Defense Financial Manager

To address the need for high-performing managers in the resource management field, the Department of Defense teamed up with the American Society of Military Comptrollers to develop a certification for defense financial managers—the Certified Defense Financial Manager (CDFM). Personnel who achieve CDFM certification have met an established standard of excellence for professional managers of defense resources.

CDFM resource managers (RMs) in the Department of Defense (DOD) are using Lean Six Sigma (LSS) to manage DOD-level organizational change and development to link communications with everyday business solutions.

THE “LEAN” APPROACH
SIMPLIFIES PROCESSES BY
ELIMINATING OR REDUCING
WASTE AND NON-VALUE-ADDED
ACTIVITIES.

Meeting the Need for Competent RMs

It is time for RMs to be CDFM and LSS qualified so that they can meet the demands of managing change.

RMs continually try to implement successful and significant change; it is innate in their jobs. Some are very good at this effort, but others often struggle and fail. That is often the difference between RMs who thrive in their roles and those who are shuttled around from job to job eventually settling into roles where they are frustrated and ineffective.

Many schools have educational programs about organizations, business, leadership, and management. Unfortunately, not enough schools have programs about how to analyze organizations and identify critically important priorities to address systemic problems.

The Challenges to Managing Military Resources

The many financial management systems used by the military services are not uniform or designed for overseas contingency operations. DOD recognizes the pressing need to reduce the costs of their nonwarfighting support organizations and to expand the quality of the products and services those organizations deliver to the field. Accordingly, DOD has initiated LSS business transformation programs at the division, and sometimes brigade, level to augment and simplify business processes.

The RM plays the key role in lessening costs. At the operational level, the lack of system integration and support results in the use of manual procedures to account for costs and in incomplete reporting of total costs. It also results in major delays in reporting costs because of the requirement to send transaction information “up the chain” for input into the Resource Management Tool, the General Fund Enterprise Business System, and the Standard Finance System. These practices ultimately lead to deficiencies in determining future budget requirements.

RMs are carrying out their responsibilities by integrating CDFM and LSS responsibilities as the fat is cut from the budget and the overseas contingency operations wind down.

Lean Six Sigma

LSS, DOD's tactic for continuous process improvement, merges two approaches to business transformation. The "Lean" approach simplifies processes by eliminating or reducing waste and non-value-added activities. Lean focuses on improving quality while reducing cost and time. The "Six Sigma" approach seeks to improve quality performance in repetitive processes. In doing this, Six Sigma focuses on minimizing variation in these processes.

Together, Lean and Six Sigma provide a set of analytical tools that business process owners can use to define their processes, identify the value-added and non-value-added activities, and transform processes to produce desired changes in quality, cost, and time. By incorporating the "define, measure, analyze, improve, control" method of LSS, RMs encourage creative thinking within set boundaries, such as keeping the basic process, product, or service.

The RM's Role in LSS

In supporting the LSS role, an RM's most important task is to develop the project cost estimate, which determines whether the project will generate savings and identifies the dollar value of the benefit. Developing cost estimates can be challenging because cost and economic analyst positions were removed from many DOD RM organizations several years ago. Combining LSS and CDFM is the procedural and technical tool that is intended to help fill this gap by giving RMs the guidance and instruction they need to prepare cost estimates.

To carry out the LSS project support role, an RM must be a member of the project team (a part-time job). Keeping in mind that the RM's principal function is to ensure that an accurate cost estimate is developed, his participation must be sufficient to provide an understanding of how the business process under review is executed at present and how it will be performed after LSS project implementation. Once the RM has a thorough understanding of the before and after views of the process, developing the cost estimate becomes relatively straightforward.

Obtaining a CDFM credential and LSS qualification produces a roadmap for organizational and personal growth. It allows an RM to become the person in his organization that senior leaders go to in tight situations. It also allows him to promote within the organization and with senior leaders an understanding of a broad array of financial management issues and topics, which makes him more valuable to leaders and the organization. Obtaining both the CDFM and LSS qualifications, and encouraging other RMs to do the same, demonstrates that our military financial leaders are committed to improvement.

Joint Financial Management

The progressively more multifaceted workplace demands a broader range of expertise. The military services should formally combine financial management training and education opportunities in order to develop personnel who are more capable of operating in a joint financial management environment. Short of establishing a joint financial management course, cross-training could be achieved simply by inviting members from the other services to attend service-specific financial management courses. Operations Iraqi Freedom, New Dawn, and Enduring Freedom have taught us that future operations will by and large be joint endeavors. The education and training of our financial management professionals should reflect this changing dynamic by making CDFM and LSS certification requirements for RMs.

**THE MILITARY SERVICES
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FINANCIAL MANAGEMENT
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MANAGEMENT ENVIRONMENT.**

Although the military can expect the same level of dedication and support from its financial management professionals in future overseas contingency operations, it cannot expect those operations to be any easier or less complex than those it is fighting today. Improving financial management systems and training and educating financial management professionals will go a long way toward enabling the military to accomplish its financial management objectives for joint operations and meet the operational challenges that lie ahead. Having RMs who are CDFM and LSS qualified is the key to managing change in resource management.

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Sustainment Preparation of the Operational Environment Planning and Assessment Tool

This article provides a brief overview of a sustainment tool that provides a process for the operational-level planner to assess the capabilities and resources available in an area of responsibility prior to deployment.

By Lieutenant Colonel Bill Knight, USA (Ret.)

Logistics preparation of the theater (LPT) is an old term for the logistics mission analysis and planning process used to prepare for providing support at the operational level. This assessment tool has been taught at the Army Command and General Staff College (CGSC) in both the Advanced Operations Course and as an elective since academic year 2005. This assessment tool was recently updated and renamed to reflect current doctrinal ideas and concepts from Field Manual (FM) 4-0, Sustainment, and Joint Publication (JP) 4-0, Joint Logistics. [FM 4-0 was replaced with Army Doctrine Publication (ADP) 4-0, Sustainment, on 31 July 2012.]

The new term we propose and currently use in the classroom is the “Sustainment Preparation of the Operational Environment Planning and Assessment Tool.” This article will expand on the ideas within these two doctrinal publications to further develop and refine this tool for sustainment planners. This planning and assessment process tool may not be all-inclusive since each decisive action (previously known as full-spectrum operation) is unique and may require different sustainment planning considerations or data collection categories or files.

Sustainment Planning and Assessment Tool

This sustainment-focused planning and assessment tool is comparable to, but not to be confused with, intelligence preparation of the battlefield (IPB), which is found in FM 2-01.3, Intelligence Preparation of the Battlefield. The sustainment assessment process is primarily initiated with open-source references, such as web-based research, documents, and commercial satellite imagery, until a formal military IPB is required. This assessment process is meant to be completed quickly. The initial findings are used before force deployment to provide the planner with

an indicator of what resources, environmental factors, and capabilities a country or area of operations (AO) has.

This process also will provide the planner with indicators of sustainment “topics of interest” that require further research once a specific mission has been designated. For example, annual climate data and terrain information collected through this process can provide excellent information that is used to tentatively identify weather and terrain hazards, potential effects on key transportation hubs and lines of communication, and sites for key sustainment support areas in the AO. This information is collected and collated; it should be retained and archived in sustainment-relevant data files for current and follow-on planning.

Follow-on actions from this sustainment assessment may include identifying requirements for preparing intermediate staging bases, selecting and improving lines of communications, projecting and preparing forward support bases, forecasting and building operational stock assets forward and afloat, and initiating talks with a foreign country’s leaders that result in future sustainment and support agreements. When a future military mission in the AO has been identified, sustainment planners would reopen the archived files and confirm or update the data previously assessed. These updated files, along with formal IPB and classified data from other sources, are used to initiate sustainment estimates to support operation plans, and follow-on development of comprehensive operational sustainment annexes to support operation orders.

Open Sources Used for Initial Assessment

Outside of the military IPB process (many of these sources being classified), many relevant informa-

CORE LOGISTICS CAPABILITIES

Core Capabilities	Functional Capabilities
Supply	<ul style="list-style-type: none"> -Manage Supplies and Equipment -Inventory Management -Manage Supplier Networks
Maintenance Operations	<ul style="list-style-type: none"> -Depot Maintenance Operations -Field Maintenance Operations -Manage Life Cycle Systems Readiness
Deployment and Distribution	<ul style="list-style-type: none"> -Move the Force -Sustain the Force -Operate the Joint Deployment and Distribution Enterprise
Health Service Support	<ul style="list-style-type: none"> -Casualty Management -Patient Movement -Medical Logistics -Preventive Medicine and Health Surveillance -Theater Medical Information
Engineering	<ul style="list-style-type: none"> -Combat Engineering -General Engineering -Geospatial Engineering
Logistics Services	<ul style="list-style-type: none"> -Food Service -Water and Ice Service -Base Camp Services -Hygiene Services
Operational Contract Support	<ul style="list-style-type: none"> -Contract Support Integration -Contract Management

This chart shows the relationship between core logistics capabilities and functional logistics capabilities.

tion collection sources—governmental and commercial—also collect, collate, and store “IPB-like” data on a routine basis. The information that these open sources store on the World Wide Web, to include published reports, can assist the sustainment planner in building his initial assessment database. Although some information may be suspect, it is a starting point from which the sustainment planner can further research and validate requirements.

The U.S. Department of State, with its worldwide embassies and military attaché offices, is an excellent source of detailed information on any particular country. Embassy staffs routinely do country studies that, when current, can provide detailed information on political and economic issues and potential resources to support an operation. Embassy personnel can also provide vital assistance when coordinating theater contract support for military forces, and coordinating support efforts with other Government agencies and intergovernmental, nongovernmental, and international organizations currently operating in country.

If Army Civil Affairs units have been operating in a specific country or AO, a wealth of intelligence

information (such as human intelligence) will be available to review during the sustainment assessment. These units have functional specialists who focus on particular areas such as civilian supply, public health, public safety, and transportation.

Additional web-based open sources of information include CultureGrams™ through ProQuest LLC and Brigham Young University; country studies and profiles produced by the Federal Research Division of the Library of Congress; country studies or area handbook series sponsored by the Department of the Army between 1986 and 1998; The World Factbook published by the Central Intelligence Agency; and country profiles produced by the United Nations Statistics Division. Multiple studies also are published by the Department of Defense and other Government agencies; these studies are unclassified and available on the Internet, such as can be found in the Combined Arms Research Library at Fort Leavenworth, Kansas.

Doctrine Updates

FM 4–0 introduced the new term “sustainment preparation of the environment” and described it as

SUSTAINMENT					
Joint Sustainment Function	Joint Logistics Capabilities	Supply Deployment and Distribution	Supply Transportation and Distribution	Logistics	Army Sustainment Warfighting Function
		Maintenance Logistics Services Operational Contracting Engineering	Maintenance Field Services Operational Contracting General Engineering		
	Health Services	Army Health Systems Support	Army Health Services		
	Personnel Services	Human Resources Support Legal Support Religious Support Financial Management Band Support	Personnel Services		
*Chemical, biological, nuclear, radiological, and high-yield explosive					

This chart from FM 4–0, *Sustainment*, provides a simplified explanation of the crosswalks of the subfunctions between the joint sustainment function and Army sustainment warfighting function.

the “analysis to determine infrastructure, environmental, or resources in the operational environment that will optimize or adversely impact a friendly force’s means to support and sustain the commander’s operations plan.” This doctrinal manual stressed that a thorough assessment will assist logisticians (sustainment planners) in developing the most effective method of providing flexible and responsive support.

The original doctrinal manuals, published from 1993 to 1995, named six factors associated with the LPT process of data collection, categorization, and analysis. These six factors—geography, supplies and services, facilities, transportation, maintenance, and general skills—remain under the sustainment preparation of the environment concept. FM 4–0 defined each factor and its associated information as follows.

Geography. This includes information on climate, terrain, and endemic diseases in the AO. Use this information to determine the type of equipment

needed and when it is needed. Use water information to determine the location of ground water, drainage, run-off areas, and the need to deploy well-digging assets and water production and distribution units.

Supplies and Services. This includes information on the availability of supplies and services in the AO. The most common supplies are subsistence items, bulk petroleum, and barrier materials. The most common services include laundry and bath, sanitation, and water purification.

Facilities. This includes information on warehousing, cold storage facilities, production and manufacturing plants, reservoirs, administrative facilities, sanitation capabilities, and hotels.

Transportation. This includes information on road and rail networks, inland waterways, airfields, truck availability, bridges, ports, cargo handlers, materials-handling equipment, traffic flow, choke points, and control problems.

Maintenance. This includes information on host-

nation maintenance capabilities. Collecting information on contract maintenance facilities, the commonality or standardization of major end items and repair parts across the force, and the host nation's internal capacity for fabricating repair parts would also be key in planning support of coalition operations.

General Skills. This includes information on general skills such as translators and skilled and unskilled laborers. Some of the more common skills to be looked for are drivers, administrative clerks, dockworkers, materials-handling equipment operators, food service personnel, security guards, and mechanics.

FM 4-0 also emphasized the importance of understanding the link between sustainment as a joint function and as an Army warfighting function. It stated, "Sustainment is inherently joint in the U.S. Armed Forces." (See chart at left.)

The assessment process tool currently published in student texts at CGSC expands this linkage from the original 6 logistics factors to 15 data collection categories that better align sustainment with the current operational environment. The additional categories published in the student text are combat health support, personnel services support, field services and sanitation, special operations forces support, joint and multinational operations support, mission command, government, training, and "other" factors. When operational planners research the proposed 15 categories and analyze or assess the data collected, they will be in a better position to develop their initial conclusions and impact sustainment operations for the mission being planned. This assessment should tentatively identify any future sustainment challenges that may affect the mission(s) in an AO.

JP 4-0 and the JP 4-x series of joint publications provide a doctrinal framework for joint logistics planning and execution across a range of military operations. JP 4-0 also introduces a new term, "the joint logistics environment," which "consists of the conditions, circumstances and influences that affect the employment of logistic capabilities . . . and includes the full-range of logistic capabilities, stakeholders, and end-to-end processes."

After reading both FM 4-0 and JP 4-0, I interpret both sustainment preparation of the environment and the joint logistics environment as similar concepts and doctrinal ideas that support sustainment-logistics assessment. However, these two concepts and ideas have not been combined and published in a single tactics, techniques, and procedures publication to assist the planner in thinking through this detailed process. The CGSC publication, Student Text 4-1, Sustainment in the Theater of War, provides a detailed and simplified process—a standard tool—to conduct this assessment in preparation for future

sustainment and support operations. (After comparing FM 4-0 and ADP 4-0, I find that the doctrinal information in this article is still accurate.)

The Purpose of the Tool

The intent of the assessment tool described in this article is to provide an initial sustainment assessment tool for a planning staff to execute before developing a sustainment estimate for a designated operation or specific mission. An operational-level sustainment planner may be tasked to provide a brief overview of the resources and capabilities that a specific country has within the combatant command's area of responsibility.

A sustainment planner must identify gaps in these capabilities or resources available in country (potential host-nation support) and in surrounding countries within the area of responsibility. This process provides some key sustainment and operational environment planning hints that directly or indirectly affect support of a future operation. This assessment tool, published in a checklist format, is a starting point for sustainment planning for joint, interagency, and multinational operations.

Based on Executive Agent, Title 10, and common user logistics responsibilities across the Armed Forces and Department of Defense, much of an operational-level planner's initial assessments and considerations for sustainment of forces are joint in nature. Those unique sustainment and support requirements that specifically apply to the sister services, other Department of Defense agencies, Government organizations, and multinational partners, although important, are not specifically addressed in this article.

If your unit would like to further discuss this process, provide comments to improve the process and further refine the data collection categories, or receive a complete copy of the 16-page sustainment planning and assessment tool, please either email the author at bill.knight1@us.army.mil or call him at DSN 552-4425 or (913) 684-4425.

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Hybrid Airships for Lift: A New Paradigm

Hybrid airships can fill a gap in the current military airlift system. But first, the Department of Defense must examine misconceptions about their safety and operational challenges.

By Major Zachery B. Jiron, USAF

The U.S. military's mobility platforms provide the basis for the Nation's global reach and power projection across the full range of military operations. However, as the Department of Defense (DOD) enters the second decade of the 21st century, it faces daunting challenges in fulfilling current and future mobility requirements. Budget cuts will force DOD to make difficult decisions in determining what combination of mobility assets across all of the services meets its logistics requirements.

These decisions may prove to be more critical in supporting a future joint operating environment that requires flexible lift platforms to accomplish point-of-need cargo delivery to the warfighter. All viable options for future transportation modes must be carefully evaluated, including the development of a hybrid airship for lift.¹

Even though airships are currently demonstrating military utility and value in a number of applications, including intelligence, surveillance, and reconnaissance, border patrol, and communications platforms, considerable resistance is still encountered when the use of a hybrid airship for military lift is proposed. When presented as a transportation option, pragmatic assessment of hybrid airship use is hampered by stovepiped mobility analysis and narrow thinking or misconceptions about the operational challenges that face hybrid airships in a military environment.

Understanding the Potential of Hybrid Airships

With their ability to efficiently transport a large range of payloads across strategic distances to austere locations, hybrid airships have the potential to fill a gap in the current mobility system. These vehicles offer promis-

ing advantages to the future transportation distribution network because they are more economical to operate than fixed- and rotary-wing aircraft and do not require the complex, costly infrastructure currently needed for air and sea transportation modes.

Although airplanes and sealift vessels are proven transport modes, they must always terminate at an airport or seaport, and those rarely coincide with point-of-need destinations. Hybrid airships offer the potential to deliver supplies directly to users, avoiding the complications inherent in multimodal port operations. From combat cargo lift to humanitarian assistance and disaster relief operations to civilian cargo delivery in austere environments, hybrid airship technology is now poised to transform the transportation landscape. The fusion of more than a century of technological advances has shifted hybrid airship development from the realm of future concept to a realistic near-term production possibility.

However, while military logisticians are beginning to realize the potential lift capabilities of the hybrid airship, misinformed opinions on the challenges of using airships continue to plague rational analysis of the topic. A balanced assessment of the airship's potential use for military lift is not possible unless military personnel detach airlift from traditional paradigms of current analysis and understand that hybrid airships have the potential to be a separate-but-equal transportation mode.

As stated by Dr. Robert Boyd, the hybrid lift portfolio senior program manager for Lockheed Martin Aeronautics Advanced Development Programs, the hybrid airship "is not well characterized by either airplane-derived or airship-derived relations The implicit sensitivity to both speed and size sets this type of vehicle apart from

¹ Detailed operational concepts (including land and water operations) and engineering principles for cargo hybrid airships have been well established in a number of research efforts beyond the scope of this analysis. It is assumed that the reader is aware of the overarching principles in design and employment of the vehicle and also possesses a basic understanding of the advantages and challenges involved when considering the vehicle for lift. A thorough overview is available in "Back to the Future: Airships and the Revolution in Strategic Airlift," a 2005 study conducted by Colonel Walter O. Gordon, USAFR, and Colonel Chuck Holland, USAF (Ret.), and published in the *Air Force Journal of Logistics*, Fall–Winter 2005, pp.48–62. (www.afma.hq.af.mil/shared/media/document/AFD-100120-037.pdf)

other flight vehicles, yielding unique design constraints and objectives.”²

Among U.S. military personnel, notions about the perceived operational disadvantages of employing hybrid airships for lift are rooted in a cursory selection of historical airship disasters and a well-intentioned but flawed understanding of the topic. These misinformed preconceptions allow decisionmakers to summarily dismiss the idea. Therefore, to address the viability of employing hybrid airships as a future mode of U.S. military airlift, personnel must understand the value of assessing hybrid airships as a different transportation mode.

This can be done by briefly examining general airship history and the basic concepts of using hybrid airships for military transport while considering the strategy and doctrine shaping lift requirements for the future joint operating environment.

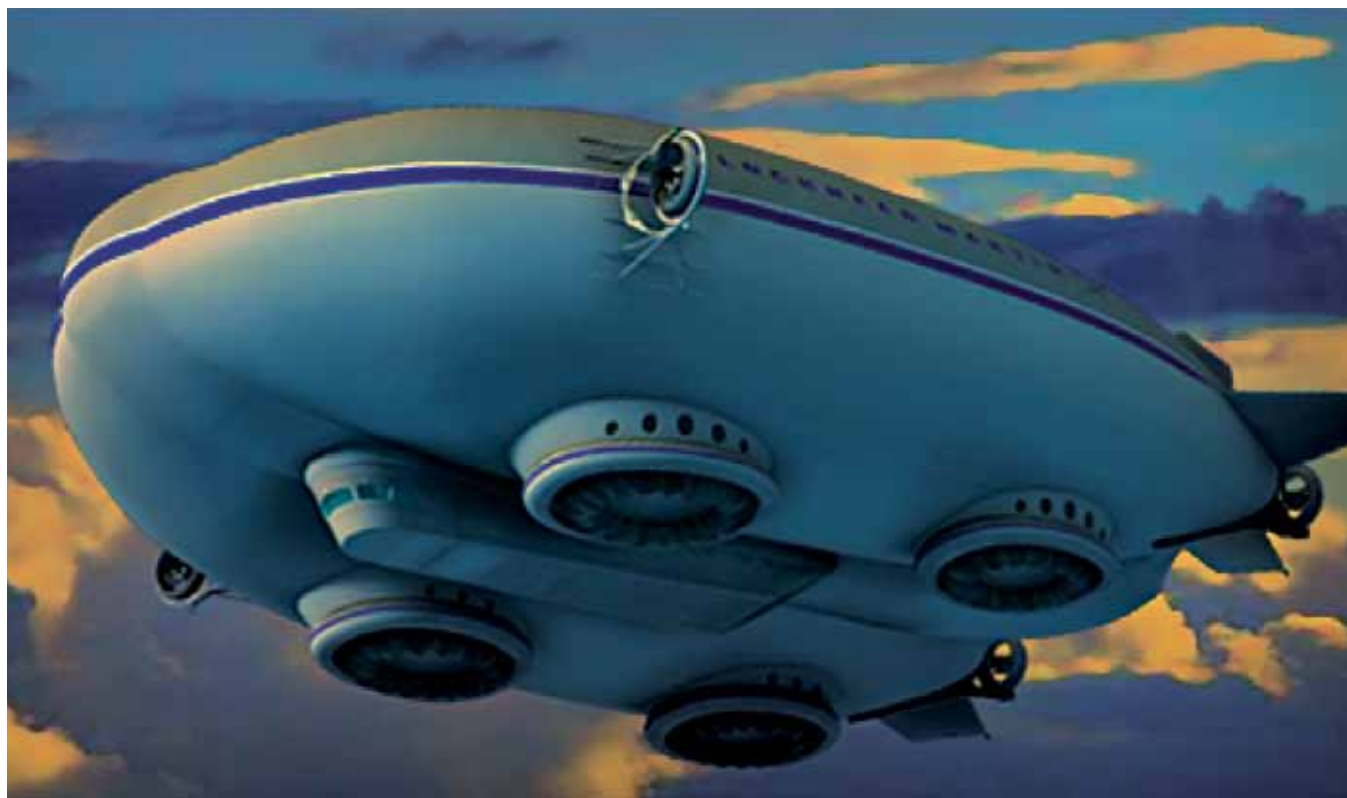
Airship History: An Exemplary Record

Hybrid airships should be examined as a distinctive mode of transportation for the global logistics system instead of trying to model them strategically and operationally as simply another airlifter.

Although airships are different for a number of reasons, the first barrier to a reasonable assessment arises from a selective deliberation on general airship history. In military airlift discourse, airships invoke a false idea of obsolete technology; most personnel immediately envision the *Hindenburg* crash of 1937. Despite more than 70 years of technological and engineering advances, the *Hindenburg* connection quickly reduces the debate to presupposed inadequacies in airship safety, which makes the military lift platform seemingly easy to dismiss. The first step in detaching the airship analysis from the standard airlift paradigm is to examine the often-forgotten history of its extraordinary performance in a challenging military environment that ended more than 50 years ago.

Although a number of historic airship tragedies easily affect current airship analysis, it is equally important to recall the impressive operational record of airships during the first half of the 20th century. Twenty years before the *Hindenburg* was destroyed, a German airship transported more than 30,000 pounds of cargo 3,600 miles from Bulgaria to Africa in 95 hours—landing with 64 hours of fuel remaining.³ In 1929, the *Hindenburg*’s sister ship, the *Graf Zeppelin*, circumnavigated the

This Lockheed Martin concept of the hybrid air vehicle has a very different look from the Goodyear blimp typically envisioned when thinking of an airship. (Photo courtesy of Lockheed Martin)



² Robert R. Boyd, “Performance of Hybrid Air Vehicles, American Institute of Aeronautics and Astronautics Report 2002–0388, 40th Aerospace Sciences Meeting and Exhibit, 12–15 January 2002, Reno, Nevada, p. 1.

³ Colonel Walter O. Gordon, USAFR, and Colonel Chuck Holland, USAF (Ret.), “Back to the Future: Airships and the Revolution in Strategic Airlift,” *Logistics Dimensions* 2006, July 2006, p. 19.

globe with only four stops, completing a 7,000-mile leg between Germany and Japan in 100 hours.⁴ Both feats were unimaginable by aircraft at the time and proved that airships offered incredible potential for numerous military applications despite primitive technology and engineering in the contemporary aerospace field.

The U.S. Navy operated only four rigid airships from 1923 to 1941. They did suffer a 75-percent loss rate because of weather-related accidents—a significant, but understandable, number given the problematic weather prediction and monitoring capabilities of the time.⁵ However, few recall that three of these four Navy airships logged over 1,500 flight hours before loss or retirement, a record far more remarkable than that of the first four U.S. military aircraft.⁶ All things considered, in a period of limited weather forecasting and primitive technological development, rigid airships performed at an exemplary level in a demanding global aviation environment.

The transition to nonrigid airships resulted in even more robust vehicles executing a number of complex military missions. During World War II, the Navy used nonrigid airships for antisubmarine warfare, convoy escort, and airborne early warning. It operated 134 blimps with an 87-percent availability rate and suffered only 1 combat loss.⁷ Before retiring the last nonrigid vehicle in 1961, the Navy flew 36,000 missions and accumulated a remarkable 412,000 flight-hours.⁸ Equally impressive was the 1957 flight of the Navy's nonrigid ZPG-2 *Snow Bird*, which took its crew on a 264.2-hour, 9,448-nautical-mile voyage and broke world records for total continuous unrefueled distance and time aloft.⁹

Thus, for a 50-year period ending more than half-a-century ago, airships posted noteworthy safety and mission completion records in a number of dynamic environments despite the limited technology of the time. If it were not for tremendous advances in fixed-wing aircraft technology, airship development might have accelerated in parallel and hybrid airship cargo platforms would be employed today.

Although this is only a small sampling of the historical capabilities of airships, it is the first step in demonstrating that airships should not be assessed using a traditional airlift paradigm. While historical airship difficulties are important to consider, their tremendous accomplishments are also critical to assess when contemplating the

use of such vehicles in the future.

The Hybrid Airship: An Augmenting Capability

A second aspect that is essential to accurately framing an analysis of the hybrid airship is a basic understanding of the vehicle itself. A working knowledge of its capabilities and operational concepts is critical in recognizing that it does not fit into a standard airlift paradigm.

When developing airship platforms for heavy lift, modern aircraft manufacturers are developing concepts based on the hybrid airship. Unlike traditional airships that rely on a contained gas within the envelope to provide all required lift for flight, hybrid airships use a combination of buoyant lift (provided by a gas such as helium), aerodynamic lift (generated by airflow across the surfaces of the vehicle) and, in some cases, direct vertical lift provided by propulsion systems (similar to current rotary-wing aircraft). In essence, this lift combination allows the vehicle to climb and descend in a heavier-than-air fashion—a critical attribute that allows for a greater useful payload range and overcomes the historical challenges of buoyancy control that have plagued engineers when designing airships for lift.

With envelope buoyancy providing 70 to 80 percent of the required lift and aerodynamic lift providing the remainder, engineers can maximize payload ranges and optimize fuel and speed efficiencies.¹⁰ This gives the hybrid airship significant advantages and potential operational capabilities when augmenting traditional lift modes. Tremendous fuel efficiency, a cruise capability of 100 or more knots, a payload-driven short takeoff and vertical landing capability, and self-contained ground-handling systems place hybrid airships in an entirely different category of lift options.

Many aspects of this platform are drastically different from current land and sea mobility platforms, so it is beneficial to use perspectives from both modes to best assess hybrid airship operational capability. Instead of a flight deck, a hybrid airship would be controlled like a traditional ship's bridge, with a mission commander overseeing critical phases of the mission (similar to naval operations). This introduces significant implications for mission planning, crew management, and a number of other operational issues that require a different perspective from legacy lift platforms. For example, traditional runway and terminal operations do not apply to the hybrid airship; in-

⁴ Ibid., p. 20.

⁵ Military Potential of Hybrid Airships, RAND Project Air Force Report FA7014-06-C-001 (Proprietary), RAND, Santa Monica, California, May 2008. [Information cited by author is non-proprietary, used with permission from Blaise Durante, SES, SAF/AQX, 23 August 2011.]

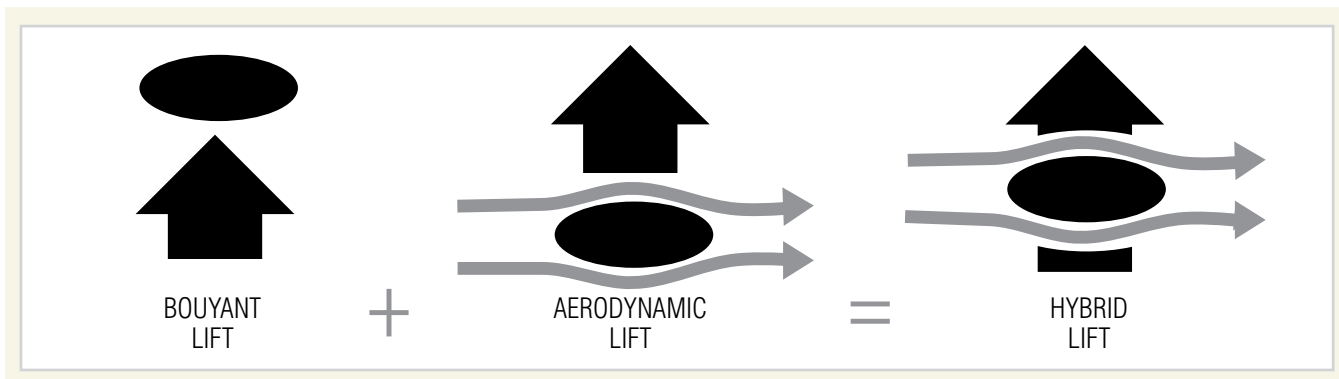
⁶ Gordon and Holland, "Back to the Future," p. 20.

⁷ RAND, Military Potential of Hybrid Airships, p. 27.

⁸ Ibid, p. 27.

⁹ Roy A. Grossnick, ed., *Kite Balloons to Airships . . . the Navy's Lighter-than-Air Experience*, U.S. Government Printing Office, Washington, DC, 1987, pp. 73–75, <www.history.navy.mil/branches/lta-m.html>, accessed 7 September 2011.

¹⁰ Robert R. Boyd, Interview with author, 31 August 2011.



Modern aircraft manufacturers are using the hybrid lift concept in developing airship platforms. (Chart courtesy of Lockheed Martin)

stead of a runway, operators would be concerned about a clearway. And crosswind arrival and departure operations are not an issue; the vehicles always operate into the wind.

In light of these and many other nontraditional factors, operational assessments of hybrid airships diverge significantly from traditional fixed- and rotary-wing platforms. Hybrid airships would not replace mobility modes but would enhance future distribution systems. Instead of supplanting the other air, sea, and land modes of transport, hybrid airships would augment the intermodal system and operate in the critically uncontested cost and speed gap between surface (sea and land) and traditional air modes of transportation.

Based on quantitative and qualitative analyses, the U.S. Transportation Command (TRANSCOM) recently released its 2011 Future Deployment and Distribution Assessment, which provides a cogent summary of hybrid airship capabilities:

The capabilities of hybrid airships could be applied to a multitude of missions throughout the range of military operations. They offer the payload and range to deliver operationally significant forces and sustainment over strategic distances. They could access any open location in the Joint Operations Area (JOA), have the ability to bypass enemy defenses and overcome area denial efforts, and have the precision to deliver to or near the desired point of need that may not have adequate infrastructure.¹¹

Faster than a ship but significantly cheaper than strategic and tactical aircraft, hybrid airships can deliver cargo directly to the land and sea points of need with minimal fixed infrastructure requirements. This minimizes the

cost and transload-time requirements inherent in contemporary multimodal operations.

In fact, recent TRANSCOM analyses suggest that, while costlier than surface shipping, hybrid airship operating and sustainment costs range from one-half to one-tenth of current air modes (CH-47 Chinook helicopter to Boeing 747-400) and cost 10 times less to develop than commercial and military aircraft.¹² This is a critical consideration for a potential joint vehicle supporting all DOD branches since aircraft development costs can now reach tens of billions of dollars and aging equipment and fuel costs push operating and sustainment costs prohibitively higher.

Advances in materials, propulsion, and ground-handling technology have resulted in the potential for a wide range of payload options, ranging from 20 to 500 tons, with self-contained on-and-off-load capability and mooring systems that reduce the intensive manpower requirements that plagued early airships. Industry experts believe 500-ton payload variants will be technologically viable within 20 years.¹³

These are simply a few of the many advantages of employing hybrid airships for lift, and they demonstrate that the platform does not neatly fit the traditional airlift model. In a pragmatic assessment of future military use, hybrid airship size, employment, and capability are remarkably different from conventional airlift and should be viewed as such. Linking this idea with logistics doctrine and strategy reinforces the idea that the hybrid airship should be appraised through its own framework.

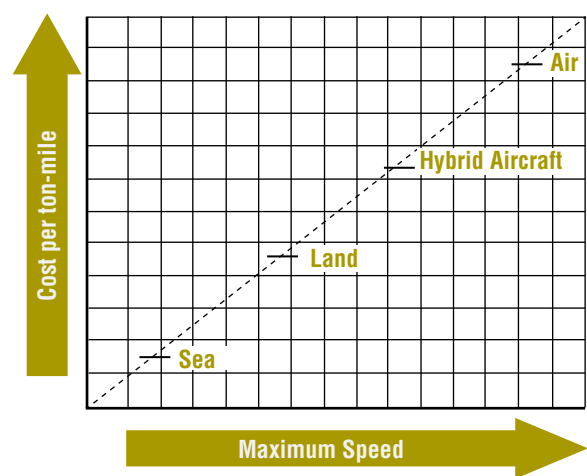
Doctrine and Strategy: Future Requirements

U.S. national security strategy and military doctrine provide the basis for future military logistics require-

¹¹ "Future Deployment and Distribution Assessment: Mobility Lift Platforms (Volume I)," TRANSCOM Joint Distribution Process Analysis Center, Scott Air Force Base, Illinois, June 2011, pp. 2-3.

¹² Boyd, interview, 31 August 2011.

¹³ Ibid.



Using hybrid airships to transport cargo could provide an alternative to land transportation that would provide significant cost savings over traditional air transport. (Chart courtesy of Lockheed Martin)

ments and how they assist DOD in meeting national security commitments. The key strategy and doctrine quoted below provide the basis for leveraging potential hybrid airship capabilities in conjunction with current and future lift modes and reinforce the requirement to analyze the hybrid airship as a distinctive, but complementary, transportation mode.

2011 National Military Strategy: Joint forces will “become more expeditionary in nature and will require a smaller logistical footprint.” They will “perform full spectrum operations to assure . . . rapid global mobility . . . and retain the ability to project power into distant, anti-access environments.”¹⁴

2010 Joint Operating Environment: “In planning for future conflicts, Joint Force commanders and their planners must factor two important constraints into their calculations: logistics and access.”¹⁵

2009 Capstone Concept for Joint Operations: “We will need to develop new capabilities . . . We will need to develop new technologies and adapt existing ones to new missions.”¹⁶ Joint forces “will require a mix of air and sea strategic and operational lift capable of delivering forces and materiel to their destinations, often in the absence of capable airfield and port facilities.”¹⁷

2006 Joint Logistics (Distribution) Joint Integrating

Concept: The capabilities of the “theater distribution segment(s) fall short of what is required to integrate into a comprehensive end-to-end distribution pipeline Intra-theater lift (will be) challenged to accommodate demands of increasingly more simultaneous, distributed, and non-contiguous operations.”¹⁸

An essential task of the JDDE [Joint Deployment and Distribution Enterprise] will be to “accomplish the closure of early-deploying, expeditionary joint forces across strategic and theater movement segments in a single movement from their point of origin to a point designated by the JFC [joint force commander] and bypassing, if necessary, traditional ports of debarkation, enabling units to move to points of need for prompt operational employment in support of ‘seizing the initiative’.”¹⁹

Without assessing the hybrid airship within the framework of future mobility requirements set forth by U.S. civilian and military leaders in these guidelines, an accurate appraisal is not possible. Most importantly, these guidelines dictate that future logistics operations must be able to be executed in anti-access, area-denied environments despite any damaged or insufficient infrastructure.

DOD will be required to develop robust capabilities that enable theater access to austere land and sea ports while reducing reliance on intermodal cargo transfers. Current airlift platforms and the intermodal nature of the existing distribution network are not optimized for this direct-delivery environment. Hybrid airships can fill the void.

In essence, as a distinct mobility airlift platform, the hybrid airship cannot replace current transportation modes. But it can augment their capabilities by being employed in the critical cost-speed gap. Hybrid airships provide capabilities that are not necessarily better or worse than those of fixed- and rotary-wing lift assets—they are just different and should be viewed as such.

A true understanding of the hybrid airship’s capabilities cannot be acquired without developing a new paradigm, different than that of current mobility aircraft, for hybrid airship analysis. Contemplating airship history (both good and bad) and basic hybrid airship operational concepts while understanding the future joint logistics environment provide the appropriate perspective for assessing their viability for future lift.

Recommendations

Clearly understanding the hybrid airship’s unique operational characteristics and visualizing its use as a

¹⁴ National Military Strategy of the United States of America 2011: Refining America’s Military Leadership, 8 February 2011, Joint Chiefs of Staff, Washington, DC, pp. 18–19.4 Ibid., p. 20.

¹⁵ The Joint Operating Environment (JOE) 2010, U.S. Joint Forces Command, 18 February 2010, p. 63.6 Gordon and Holland, “Back to the Future,” p. 20

¹⁶ Capstone Concept for Joint Operations (CCJO), Version 3.0, 15 January 2009, U.S. Department of Defense, p. iv.

¹⁷ Ibid, p. 31.

¹⁸ “Joint Logistics (Distribution) Joint Integrating Concept (JLDJIC), Version 1.0, 7 February 2006, Joint Chiefs of Staff, Washington, DC, p. 10.

¹⁹ Ibid, p. 14.

distinct transportation mode reveal that it has the potential to fill the critical transportation cost-speed gap and increase lift options across the range of military operations, from humanitarian assistance to combat employment. Once the concept is judiciously examined, DOD should consider means to procure the platforms. This can be done organically or by incentivizing industry partners to acquire the assets for commercial use and military employment under a Civil Reserve Air Fleet (CRAF)-type construct. Under such an arrangement, commercial users would own and operate the vehicles and augment the DOD organic lift fleet when needed during both peacetime and contingency operations.

A significant difference between hybrid airship and traditional military lift vehicles is commercial practicability. While military variants might include defensive systems and other features needed to meet military specifications, the principle platform, from small to large variants, is being considered for a range of commercial lift requirements. This vehicle has the potential to meet the critical needs of energy and mining logistics operations in the austere locations of northern Canada, the Arctic, and Africa.

Unfortunately, the commercial demands of this niche market will not attract the funding aerospace companies need to develop a cargo hybrid airship; a clear demand signal and investment from potential military or other Government users is needed.²⁰ For this reason, it is critical for DOD to engage with industry to complete risk-reduction analysis and insist on cost-sharing arrangements for future hybrid airship development and production.

Approval of a joint capabilities technology demonstration administered by DOD in partnership with Air Force and industry would provide the basis for proving the baseline capabilities that these vehicles might offer for the future distribution system. As former Chief of Staff of the Air Force, General Norton A. Schwartz, commented, the success of the military and industry “are now mutually related, perhaps more than they have ever been, and especially with the ongoing convergence of fiscal pressures and strategic uncertainty.”²¹

In light of pending budget constraints, if the platform is developed and produced for commercial use, DOD must consider hybrid airship employment under a CRAF-type construct. This gives the Nation access to these critical assets when necessary while sharing the costs of initial design and development efforts with commercial partners.

In order to meet global mobility requirements in the future joint operating environment under constrained budgets, senior military leaders must pragmatically

assess the capabilities and liabilities of hybrid airships for lift. Realistically assessing the vehicle’s operational capabilities and challenges in the future joint operating environment requires personnel to examine the hybrid airship through the appropriate framework—a distinct mode of transportation that can significantly enhance the distribution network.

This framework must be properly constructed through an honest examination of airship successes throughout history in dynamic military environments and through a working knowledge of the capabilities and operational concepts that set it apart from legacy lift platforms. When assessing the vehicle in this light, along with significant technological leaps in all aspects of the hybrid airship, the platforms might be seen as viable lift options to fill the current cost-speed gap in the distribution system.

Hybrid airship concepts present DOD with incredible capabilities for future joint logistics at a critical time in U.S. history. Hybrid airship technology continues to mature, giving the military and its commercial partners a solution for tactical and strategic delivery to point-of-need locations without regard to intermodal infrastructure or destination austerity. Hybrid airship engineering and operational technologies are mature. The hybrid airship is now a viable lift option, and the military must partner with industry to fund and develop the hybrid airship to meet future requirements.

While procurement for an organic fleet may not be fiscally or operationally realistic, vehicle development for a CRAF-type arrangement allows DOD to leverage this tremendous capability when needed while avoiding the associated costs of operating and maintaining an organic fleet when traditional lift platforms can meet steady-state requirements. While commonly dismissed as a feasible lift option for a number of flawed or misinformed reasons, hybrid airships should be strongly and rationally considered for use in the future joint transportation distribution system.

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²⁰ “Future Deployment and Distribution Assessment: Mobility Lift Platforms (Volume I),” pp. 2–6.

²¹ General Norton A. Schwartz, Chief of Staff of the Air Force, Address to the Air Force Association Convention, Washington, DC, 20 September 2011.

Logistics Support for Small Unit Operations: The Marine Corps in the Dominican Republic, 1916–1924

The Marine Corps campaign in the Dominican Republic was often frustrating and eventually overshadowed by the much bigger operations of World War I. But it offers lessons in how to support small units operating in austere environments against elusive foes.

By Alexander F. Barnes and Sara E. Cothren

The Marine corporal shifted his rifle to carry the weapon in his left hand for a while. His platoon had been moving for only a little over an hour, and already his shirt was soaked with sweat from the tropical heat and humidity. He had been hot and sweaty before, having served in plenty of other hot climates, but the heat in the Dominican Republic was really something special.

Adding to the corporal's discomfort was the fact that, although his unit had not been shot at yet, he knew the rebels were out there watching. He also knew that the Dominican Government forces and his small column of Marines were greatly outnumbered by the rebels.

Making a bad situation worse, the government forces were proving less trustworthy than earlier believed, and chances were good that they might be thinking of switching sides—again. Nonetheless, the U.S. Government had sent him here, and it was his job to guard this supply column. Somewhere down the trail was another group of Marines spearheading an American force that would need the ammunition and water carried in his convoy.

The corporal was not one to question orders, but he really did wonder why he was even in this country. The rest of the world was blowing up half of France and Belgium in the greatest war in history, and the U.S. Army was gearing up to take part in that conflict. Yet here he was, marching through the heat and dust of a Dominican Republic summer.

The Marine corporal shifted the rifle back to his right hand and continued to walk.

U.S. involvement in the major conflicts of the 20th century (World War I, World War II, the Korean War, the Vietnam War, and the Persian Gulf War) is well known and

equally well documented. Almost forgotten are the many smaller campaigns that the American military participated in. With the Department of Defense's current trend toward downsizing force structure, the lessons learned from these smaller expeditions—many taking place in extremely austere environments—can provide some valuable lessons and insight for similar future operations. These lessons could be particularly valuable for those of us required to provide sustainment support to smaller deployed forces.

U.S. Interests in the Caribbean

Before we examine some of the unique and innovative sustainment practices and explore their possible application for modern-day forces, it is essential to understand why U.S. forces were in the Dominican Republic from 1916 to 1924 and what they were attempting to accomplish.

It started earlier than 1916. In 1904, President Theodore Roosevelt made it clear to all involved that the United States would not tolerate European encroachments in the Caribbean or Central America. While not particularly interested in expanding American territory, Roosevelt was determined that no one else would claim territory in proximity to U.S. soil to add to their list of colonies. Unfortunately, this policy resulted in the U.S. military being called on to participate in civil affairs and nation-building operations in a number of small countries.

The West Indies island of Santo Domingo (also known as Hispaniola), home to both the Dominican Republic and Haiti, captured the interest of the United States during the construction of the Panama Canal, from 1904 to 1914. Santo Domingo's location provided strategic control of the key Atlantic Ocean approaches to the canal. European expansionism had led several countries to attempt to gain influence in the region.

By 1915, the U.S. Marine Corps was already attempting

to stabilize or support the governments of Haiti, Cuba, and Nicaragua. In 1916, the Dominican Republic was added to the list.

Instability in the Dominican Republic

Dominican politics had been violent and erratic since 1911, when President Ramon Caceres was assassinated. In a 1916 power struggle, President Juan Jimenez arrested two supporters of the Minister of War, General Desiderio Arias. Almost immediately, a national crisis resulted and the country split into two factions. As armed bands roamed the streets of the capital city of Santo Domingo, the U.S. Government decided that it was time to restore order and landed two companies of Marines: the 6th Company, an infantry unit, and the 9th Company, a field artillery unit equipped with four M1903 3-inch field guns, on 5 May 1916. Commanding the 150 Marines in the landing force was Captain Frederic M. Wise.

The Marines were to be supported by the poorly trained and even more poorly equipped 800-man force loyal to Jimenez. By the time the Marines made contact with Jimenez's forces, the Dominicans had less than 20 bullets apiece to defend themselves. Not surprisingly, the first request for support from the Dominican commander was for rifles and ammunition.

Also not surprisingly, the landing of such a small force

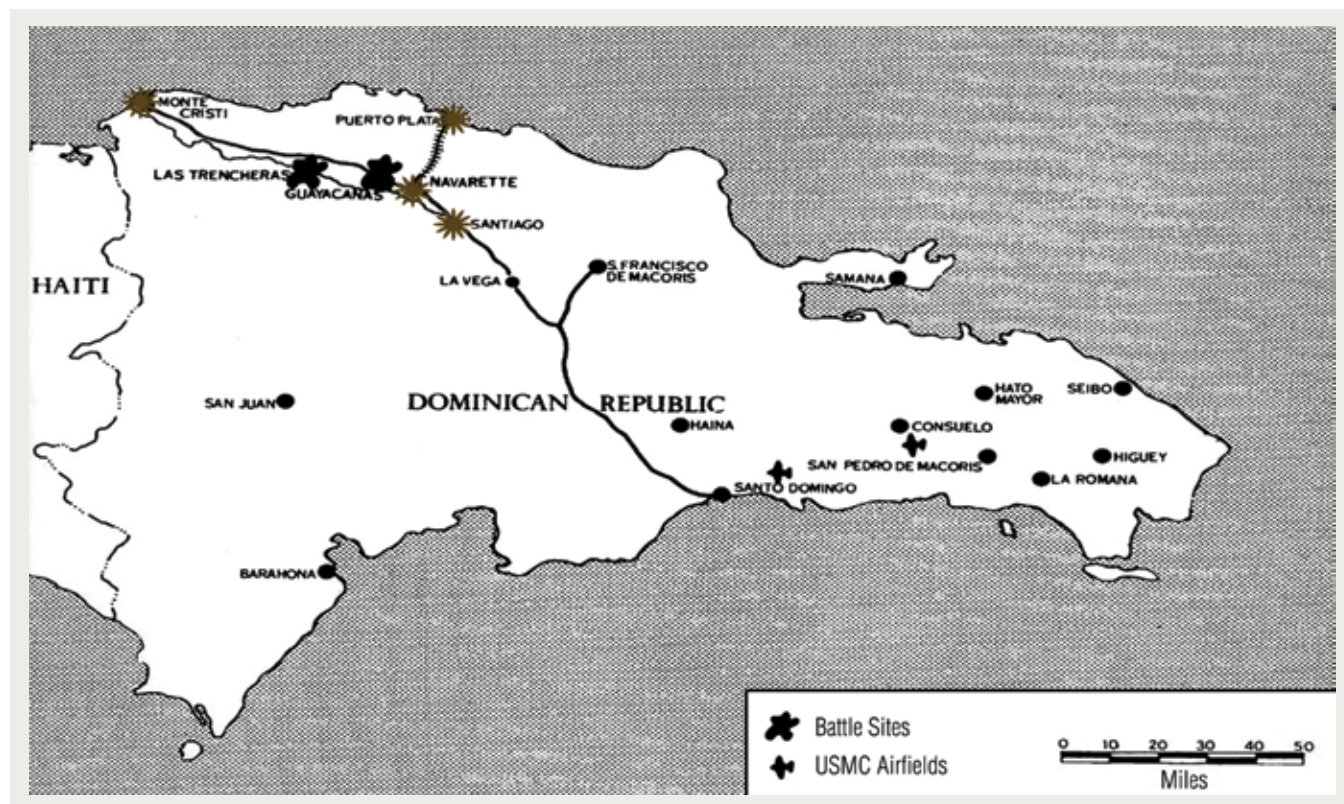
did not stabilize the country. In fact, it made conditions worse since the local population did not care much for interference by *los norte-americanos*, "the North Americans," in their country.

The Marines Occupy Santo Domingo

The 2 companies of Marines had to rely on diplomacy and self-confidence in going up against 1,000 Dominicans led by General Arias. Rather than attacking the stronger and better positioned Arias force, the Marines negotiated to move foreign nationals out of Santo Domingo and allow U.S. supplies to be moved through Arias' territory. Dominican civilian carts were hired to haul supplies to the Marines who were positioning themselves to support the Jimenez troops against General Arias in the capital city of Santo Domingo.

However, once the Marines were in place to assist in the restoration of order to the country, President Jimenez abruptly resigned. Of course, this further muddled the waters of Dominican Republic politics. However, now faced with the landing of additional Marines in the country, General Arias agreed to move his troops out of Santo Domingo.

As General Arias and his troops marched northward toward Santiago, the Marines took control of the capital. Almost daily, more Marines landed in the Domini-



A map of the Dominican Republic shows the route of the Marine columns from the northern coast to Santiago. Also displayed are the two Marine airfields that were later established to provide reconnaissance support. (Courtesy of the Marine Corps History Division)



This picture, taken near the skirmish at Guayacanas, shows the rudimentary nature of the Marines' supply column. The combination of motorized vehicles and horse drawn carts seen here is reflective of the local conditions faced by the logisticians of the expeditionary force. Note that the truck on the right appears to be pulling a four-wheeled and two-wheeled cart in tandem. (Photo courtesy of the Marine Corps History Division)

can Republic. By the end of May, the Marine force had grown to 11 companies.

Operations in the North

Two Marine companies aboard the USS *Sacramento* were positioned off the coast at Puerto Plata, a city on the northern coast directly north of Santiago and connected to that city by a railway. Two more companies were positioned offshore at Monte Cristi, a city northwest of Santiago near the Haitian border. It became clear to the Marine leaders that they would have to occupy the entire country to quell the civil unrest. A request for more troops was granted and by June the Marines in the north were ready to converge on Santiago in a two-column advance.

The 4th Regiment, commanded by Colonel Joseph H. Pendleton, made up the first column and began its 75-mile march from Monte Cristi to Santiago on 26 June. [Marine Corps Base Camp Pendleton, California, is named for Colonel (later Major General) Pendleton.] Pendleton's advance was slowed by the crumbling and poorly maintained roads the Marine column had to use. Halfway through the march, the troops were out of range of supply support from their starting point at Monte Cristi and had to rely on what they carried or foraged along the way.

During a search for water, the Marines encountered their first firefight when they found themselves confronted by rebel forces blocking the road into Santiago. Fortunately, the rebels were poor marksmen and the Marines quickly overran the Dominican's position and forced them to flee. This skirmish would become the

pattern of fighting the Marines would encounter in the Dominican Republic. On 4 July, with minimum casualties, the regiment reached Navarette, their rendezvous location with the second column of Marines coming south from Puerto Plata.

This second column, moving along the railway from Puerto Plata to Navarette, had a shorter distance to travel, but it was a time-consuming march because they needed to rebuild the railway for future use as the main supply route in the north. The Marines moving along the railway also met rebel resistance but suffered few casualties and, like their comrades to the west, forced the rebels to retreat. On 4 July, they also reached Navarette in preparation for the combined march into Santiago with the 4th Regiment.

Faced with this larger, united force, General Arias must have realized that his men were no match for the Marines. On 5 July, he agreed to disband his forces, thus allowing the Marines to peacefully enter Santiago.

Battling Bandits

With the successful completion of this campaign, the Marines found themselves virtually running the country when most local politicians chose to dissociate themselves from the U.S. Navy and Marine Corps officers attempting to impose order. Making matters worse, the Marines were also facing a guerrilla war against professional bandits who were economically, rather than politically, motivated. Marine patrols were soon dealing with Dominicans who were farmers by day but became bandits and raiders by night. Formed into loosely organized gangs of up to 50 men, these groups would raid the countryside and small towns, take whatever caught their eyes, and then fade back into the general population at daybreak.

The situation took another downward turn after the United States declared war on Germany in April 1917 and many of the best noncommissioned officers (NCOs) and officers were sent to France. This left a poorly trained force, consisting mainly of draftees, led by Marines who were disappointed that they were not being sent to France with their comrades. Nevertheless, the Marines were determined to carry out their mission and began to establish a formal supply network to support the forces in the Dominican Republic.

Improvising Support

Procuring local goods was often the only option for the Marines in the Dominican Republic. Locally procured goods ranged from food and animals to lumber and transportation. Although naval ships had brought motorized water carts and trucks, two-wheeled horse-drawn carts proved invaluable to Marine logistics throughout the country. For example, during the expeditionary stage of the occupation, the Marines relied heavily on these carts and horses to support their

supply train. The carts and horses were purchased from villagers and were used to move troops and supplies.

Initially, the Marines ate the rations they brought with them, but they were in great need of water and livestock feed. Water was gathered from nearby rivers and streams and carried by donkey or water cart.

A formal supply route was established once the railway originating in the north at Puerto Plata was rebuilt. However, despite the railway, horses and carts were still heavily relied on to reach troops stationed in the more remote areas. Numerous platoon-sized units were widely dispersed across the eastern side of the country, rounding up bandits. These patrols would carry a few days' worth of supplies. Once the supplies were depleted, the troops were forced to live off of whatever the land and the natives provided. These small units often found themselves bartering with locals for fresh vegetables, eggs, and meat.

Supplies From Home

In a sign of simpler times, Marine and Navy quartermasters in the States divided the supplies needed to support the expeditionary force in the Dominican Republic into just three main groups: food, uniforms and personal equipment, and what they referred to as "public property."

Requisitions for food originating from the Marines in the Dominican Republic were received at the Naval Supply Station located in Hampton Roads, Virginia, and filled from refrigerated and nonrefrigerated stocks there. At the time, the Hampton Roads depot maintained 6 months of stockage in its warehouses. The food items themselves were purchased from vendors throughout the country. From 1920 to 1924, more than 17,000 tons of subsistence were shipped from Hampton Roads to support the force in the Dominican Republic.

The clothing requisitioned by quartermasters in the Dominican Republic followed a slightly different route. All clothing originated from the Quartermaster Depot in Philadelphia, Pennsylvania, where it was picked, packed, and shipped to Hampton Roads for onward movement to the West Indies.

The largest class of supply was public property. As explained in the 19 July 1924 issue of *Leatherneck Magazine*, public property consisted of "Anything from a needle to bake oven . . . that is required by a Quartermaster in the West Indies." The requisitions for public property were forwarded from the Naval Supply Station in Hampton Roads to the Quartermaster Depot in Philadelphia to be filled from its stocks. In the event that the requested item, such as lumber, was not held in the depot, an "open purchase requisition" would be issued and the depot would contact vendors capable of filling the requirement. After the materiel was inspected and approved, the vendor would be paid and the

materiel entered into the depot for packing and onward movement to the supply station and the port.

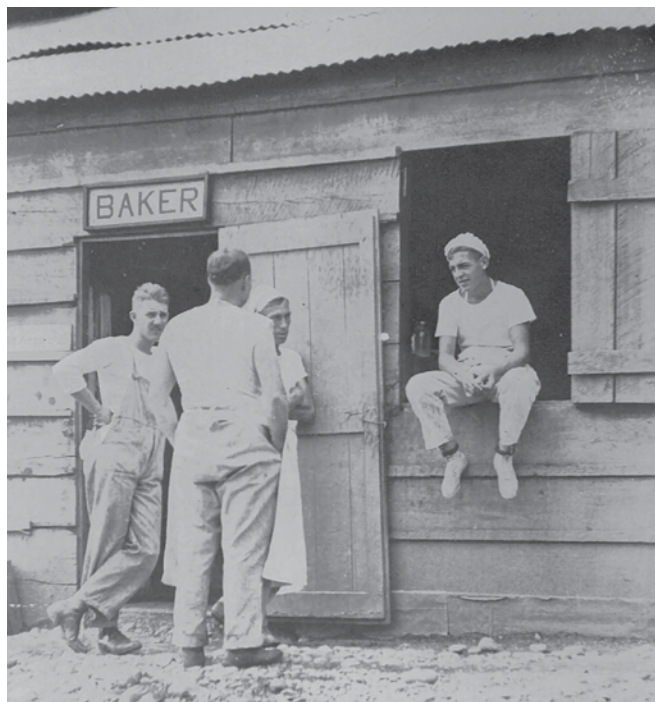
To illustrate its size and complexity, it is of interest to compare the public property operation to the clothing operation. In the case of clothing, all paperwork and packing were completed by one NCO and his assistant. Public property required the efforts of a captain, 5 NCOs, and 30 other enlisted Marines. In the period from 1920 to 1924, the depot shipped approximately 10,000 tons of public property to marines serving in Haiti and the Dominican Republic.

As noted at the time, one of the key reasons for the smooth operation of this pipeline was the habitual relationships among the Philadelphia Depot, the Naval Supply Station, and the port facilities, which were so strong that they functioned "as an integral part of each other."

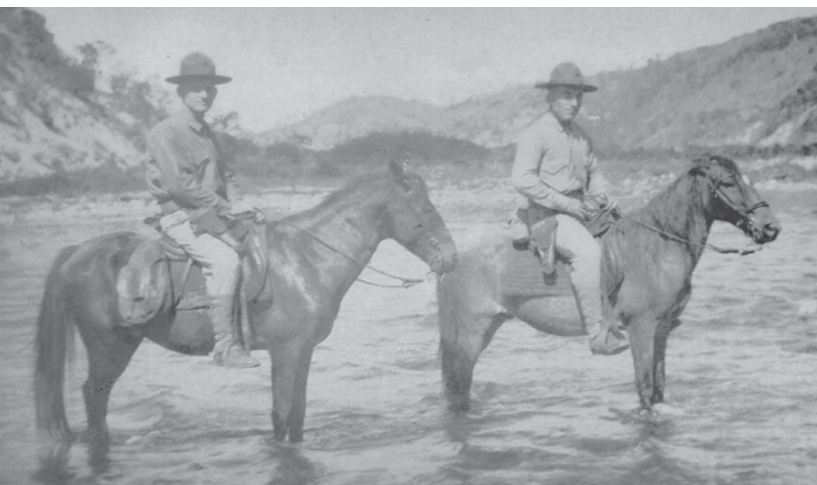
Lessons Learned

What lessons can we take away from our short study of the Marine small-unit expeditionary campaign and logistics support in the Dominican Republic from 1916 to 1924? Here are a few.

Travel light. Support light. Transportation resources and lift capability will never meet the optimal requirements for the mission. Even knowledgeable Marines with significant amounts of expeditionary experience from Vera Cruz, Haiti, and Nicaragua started the campaign against Santiago with far too much gear. In order



Marine cooks take a break outside the unit bakery. The austere nature of the campaign is obvious in the rudimentary carpentry work and tin roof of the building.



Two Marines on patrol pause in midstream. The small size of the ponies and their mismatched saddles and stirrups indicate that these animals were locally procured rather than U.S. issued.

to support the “flying columns” (small, independent, and rapidly moving land units with minimal equipment) of the Dominican campaign, the Marine supply officers rented every car and truck they could find in order to outfit the force. They even rented mule carts to supplement their organic two-wheeled handcars. But it still was not enough. Finally, the senior officers and NCOs reviewed the contents of each vehicle and ended up dumping excess personal gear, dress uniforms, typewriters, and desks in order to reduce the load.

Be creative. Knowing that the troops making the march to Santiago were going to be exposed to tropical heat and dust, the logisticians rented a mule-drawn water-sprinkler cart and used it as a field-expedient “water buffalo.” Later, when a Marine air detachment was assigned to provide aerial reconnaissance for the force, it became obvious that the wood-and-canvas aircraft had little protection against enemy ground fire. The logisticians quickly addressed this problem by obtaining a number of heavy metal stovetop covers and fastening them under the pilots’ and observers’ seats as a form of armor plate.

“You’ll do your work on water” Just as in Rudyard Kipling’s famous poem “Gunga Din,” the need to provide water to the Marines was a constant issue for the logisticians supporting the operation. At times, the availability of water was a critical factor in determining whether the flying columns could advance each day.

When your tactics don’t work, change your tactics. Early attempts at chasing the Dominican guerillas around the countryside wore out the troops and exhausted the supply chain trying to keep up. As one officer later reported, “There might be [another Marine] patrol operating in the same general area where I had a

patrol, and I would know nothing about it.” Establishing administrative regions and providing aerial reconnaissance and fixed supply bases proved a far more effective means of coordinating the American efforts and reducing the bandit population. Later attempts to involve the local population as civilian home guard units to fight the bandits ultimately proved more successful than earlier American attempts to do it alone.

One can learn a great deal from the study of these small-unit operations. Whether ordering extra stovetops to provide armor for aircraft or renting a small town’s water sprinkler cart for use as a water carrier in tropical heat, the American Serviceman proved, as he always has, his ability to adjust, adapt, and innovate in order to complete the assigned mission.

The American forces remained in the Dominican Republic for 8 years. They entered a country in the midst of a civil war. When they departed, the country was mostly cleared of banditry and under control of the popularly elected President Horacio Vasquez. After the initial period of fighting had ended, many of the Marines set about improving roads and even building schools. That many of the benefits of the American intervention in the Dominican Republic disappeared after the Marines left is certainly not the fault of those who served there.

The Dominican Republic campaign may never show up in the roster of great Marine Corps battles like Iwo Jima and Chosin Reservoir. But for the Marines in the Dominican Republic from 1916 to 1924 and the logisticians who supported them, it was a hard job and a valuable learning experience for future operations. Of equal importance, as the 1974 Marine Corps report on its service in Santo Domingo stated, “The Marine Corps could claim . . . that it had fulfilled its mission and preserved its honor intact.”

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Army Chief of Transportation Promotes Credentialing of Transitioning Soldiers

Brigadier General Stephen E. Farnen, the Army Chief of Transportation, is spearheading efforts to help transitioning Soldiers gain civilian transportation employment. His initial focus is on helping transitioning motor transport operators enter the civilian workforce as Class A licensed truckdrivers.

The Chief of Transportation's Army Driver Standardization Office (ADSO) has been working with partners from Congress, Federal agencies, State governments, industry, and trucking associations to develop a process in which military training and experience can be used to meet the professional and technical standards required for a commercial driver's license (CDL).

To be licensed, drivers must meet not only national requirements but also additional state requirements for CDL certification. In an effort to help standardize criteria, the ADSO has been working with several State departments of motor vehicles to educate officials on Army truckdriver training, vehicle classifications, documentation of driver experience, and military licensing processes.

The ADSO, in conjunction with its partners, has been successful in getting at least 27 states to recognize Army truckdriver training and experience as an acceptable standard for the driving skills test portion of the CDL exam. The driving skills test normally requires student drivers to perform a set of actual driving maneuvers successfully. Prospective drivers still must pass a written test on highway safety and a test about different parts of a truck.

To ensure that servicemembers leave the military career-ready with a CDL, the ADSO has established

a pilot project with the Commonwealth of Virginia Department of Motor Vehicles that allows the military to conduct third-party testing at select sites within the state. One of the proposed sites will be Fort Lee, Virginia where training will be offered prior to the written examination. At least 26 other states are prepared to offer this same program to transitioning Soldiers. For a current list of states participating in the program, visit <http://www.fmcsa.dot.gov/documents/reg-licensing/cdl/Military-Skills-Test-Waiver-Map.pdf>.

The Chief of Transportation's Chief for Reserve Affairs also is working with industry; the Commercial Vehicle Training Association; members of the Training, Readiness, and Mobilization Office, Assistant Secretary of the Army (Manpower and Reserve Affairs); the Army's Institutional Training Division; and the Army Reserve's Employer Partnership Office on advancing employment opportunities for Soldiers who wish to become professional vehicle operators but do not meet minimum experience requirements. Most recently, the Commercial Vehicle Training Association announced that it has some truckdriver training schools willing to administer pretest exams, tailor training according to results, and expedite the process for getting Soldiers CDLs. These selected schools will also have trucking industry employers present to conduct interviews and hire graduates.

Army Leaders Break Ground on \$9.6 Million Solar Power Project at Tooele Army Depot

On 17 August 2012, General Martin E. Dempsey, Chairman of the Joint Chiefs of Staff, and Katherine Hammack, the Assistant Secretary of the Army for Installations, Energy, and Environment, broke ground



First Transportation Rodeo Held at Kandahar Airfield

Soldiers with the 515th Transportation Company change a palletized load system's tire during Kandahar Airfield, Afghanistan's first truck rodeo competition, held 17 August 2012. The 25th Transportation Company hosted the event in which the 515th, 781st, 25th, and 1486th Transportation Companies, who support Joint Sustainment Command-Afghanistan Soldiers throughout southern Afghanistan, participated. The rodeo provided an opportunity for truckdrivers to sharpen their skills and provided the winning unit, the 25th Transportation Company, with bragging rights as the best transportation company at Kandahar Airfield. (Photo by SGT Gregory Williams)

on a \$9.6 million solar-power renewable-energy project at Tooele Army Depot, Utah. The Sterling construction project, awarded to Infinia Corp., will consist of 430 solar-powered dishes on a 15-acre site at the depot and will be used to generate 30 percent of the depot's electricity.

Defense Maintenance Award Winners Announced

A Fort Hood, Texas, unit is among the field-level winners of the 2012 Secretary of Defense Maintenance Awards. The awards recognize depot- and field-level units achievements in weapon system and military equipment maintenance.

The 1st squadron, 3d Armored Cavalry Regiment, from Fort Hood placed in the large category of the field-level maintenance awards alongside the 23d Maintenance Group, Moody Air Force Base, Georgia.

This year's Robert T. Mason Depot Maintenance Excellence Award went to the Air Force's C-130 Programmed Depot Maintenance Team at the Warner Robins Air Logistics Center, Georgia.

Blue Force Tracking Aviation Tactical Operations Center Transitions to Organic Support

The Blue Force Tracking Aviation (BFT-AVN) Tactical Operations Center Kit AN/GYK-65 has finished its transition to organic support. As of 1 October 2012, units can order parts for their aviation tactical operations center kits through their respective supply support activities. These parts can now be requisitioned through military standard requisitioning and issue procedures from the Army Communications-Electronics Command Life Cycle Management Command (CECOM LCMC)

and the Defense Logistics Agency. The Defense Advance GPS [Global Positioning System] Receiver, with the national stock number 5825-01-516-8038 or 5825-01-526-4783, fielded as an associated support item of equipment in the kit, is being issued and managed by CECOM LCMC.

A letter of instruction outlining the supply and maintenance details of the kit is being distributed to the Army Commands and combat aviation brigades. For more information or to ask questions concerning the kit, contact Jaime Astilla, BFT-AVN logistics lead, by email at jaime.astilla@us.army.mil or by telephone at (256) 895-3088.

Mobile Training Team Prepares Artillery Repairers for Armament Repairer Mission

A mobile training team from Fort Lee, Virginia, spent a month at Fort Hood, Texas, preparing artillery repairers for their new military occupational specialty of (MOS) 91F (small arms/towed artillery repairer). From 15 May to 15 June 2012, 47 Soldiers attended the reclassification training at the motor pools of the 215th Brigade Support Battalion, 3d Brigade Combat Team, 1st Cavalry Division. During this training, instructors taught Soldiers the skills needed to repair and maintain small arms stored in units' arms rooms and the M777 light towed howitzer.

In August, the Army Ordnance School instructors also taught reclassification classes for repairers at Fort Carson, Colorado, and Fort Riley, Kansas. The reclassification training is necessary as the Army phases out MOS 46B (small arms/artillery repairer) and replaces it with MOS 91F (small arms/towed artillery repairer).

Recently Published

As the Army redesigns its doctrine to meet Doctrine 2015 standards, it is releasing a number of major publications. Most recently, the following items have been added to Army doctrine:

- ❑ Army Doctrine Publication (ADP) 4-0 and Army Doctrine Reference Publication (ADRP) 4-0, Sustainment, both published 31 July 2012.
- ❑ ADP 5-0 and ADRP 5-0, The Operations Process, both published 17 May 2012.
- ❑ ADP 6-0 and ADRP 6-0, Mission Command, both published 17 May 2012.
- ❑ ADP 6-22 and ADRP 6-22, Army Leadership, both published 1 August 2012.
- ❑ ADP 7-0 and ADRP 7-0, Training Units and Developing Leaders, both published 23 August 2012.
- ❑ Field Manual 6-01.1, Knowledge Management Operations, published 16 July 2012.

The publications are available for download from <http://www.apd.army.mil/ProductMap.asp> under the "Doctrine and Training" menu. Users will have to log into the website using their common access card before they can view the publications.

Writing for *Army Sustainment*

If you are interested in submitting an article to *Army Sustainment*, here are a few suggestions. Before you begin writing, review a past issue of *Army Sustainment*; it will be your best guide. Then follow these rules:

- ☐ Keep your writing simple and straightforward (try reading it back to yourself or to a colleague).
- ☐ Attribute all quotes.
- ☐ Identify all acronyms, technical terms, and publications (for example, Field Manual [FM] 4-0, Sustainment).
- ☐ Do not assume that those reading your article are necessarily Soldiers or that they have background knowledge of your subject; The *Army Sustainment* readership is broad.
- ☐ Submissions should generally be between 800 and 4,000 words. (The word limit does not apply to Spectrum articles. Spectrum is a department of *Army Sustainment* intended to present researched, referenced articles typical of a scholarly journal.)

Instructions for Submitting an Article

- ☐ *Army Sustainment* publishes only original articles, so please do not send your article to other publications.
- ☐ Obtain official clearance for open publication from your public affairs office before submitting your article to *Army Sustainment*. Include the clearance statement from the public affairs office with your submission. Exceptions to the requirement for public affairs clearance include historical articles and those that reflect a personal opinion or contain a personal suggestion.
- ☐ Submit the article as a simple Microsoft Word document—not in layout format. We will determine layout for publication.
- ☐ Send photos and charts as separate documents. Make sure that all graphics can be opened for editing by the *Army Sustainment* staff.
- ☐ Send photos as .jpg or .tif files—at least 300 dpi. Photos may be in color or black and white. Photos embedded in Word or PowerPoint will not be used.
- ☐ Include a description of each photo submitted and acronym definitions for charts.
- ☐ Submit your article by email to usarmy.lee.tradoc.mbx.leeasm@mail.mil or by mail to—

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If you have questions about these requirements, please contact us at usarmy.lee.tradoc.mbx.leeasm@mail.mil or (804) 765-4761 or DSN 539-4761. We look forward to hearing from you.

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I certify that the statements made above by me are correct and complete:



Fred W. Baker III, 01 September 2012

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