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Medical Logistics
Transformation in Korea

The Case for an S–8
for the Brigade Combat Team

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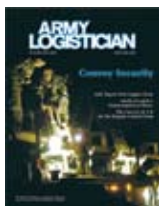
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Cover: The common operating environment has proven that all Soldiers, not just those in maneuver units, need to be equipped to protect themselves from enemy attack. While transporting supplies, logistics convoys are escorted by security teams to defend themselves from attack. The articles beginning on pages 28, 32, and 35 explore the use of convoy security teams in Operation Iraqi Freedom. On the cover, Soldiers from the 626th Brigade Support Battalion, 3d Brigade Combat Team, 101st Airborne Division (Air Assault), perform precombat checks on their gun trucks before a convoy. (Photo by SPC Luke Thornbury, 55th Signal Company)

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Advances in Property Accountability Training

BY CHIEF WARRANT OFFICER (W-5) DAVID A. DICKSON

While it has always been important, property accountability has moved into the forefront of the challenges that Army leaders are facing today. Now that operations in Iraq and Afghanistan are well established, we need to start looking at gaps in accountability procedures that have been created by the contemporary operating environment. In addition to the higher operating tempo that we are experiencing, the conversion to a modular force has created many challenges in maintaining property accountability.

One challenge that was evident early on was gaps in training. Training gaps were identified at all levels—officer, warrant officer, and enlisted. For officers, the depth of property accountability training during the various phases of the Basic Officer Leader Course (BOLC) varies by branch. This training should be standardized and reviewed periodically to ensure that it remains current and relevant. For the warrant officer newly accessed as a property book officer, a training gap exists because the new modular structure does not offer the opportunities to gain experience in property book procedures that were available in the division-centric Army. For enlisted personnel, today's supply noncommissioned officer (NCO) is not required to attend the Basic NCO Course until he enters the primary zone of consideration for sergeant first class (although the course is strongly recommended at the E-5 or junior E-6 level). This causes a gap in -20-level training and property book procedures.

To address these issues, the Army Quartermaster Center and School has been actively involved in developing computer-based, interactive, multimedia instructional (IMI) tools. A giant step forward in this area was the recent implementation of an IMI course entitled "Property Accountability for Leaders in the Contemporary Operational Environment." Its development was a joint effort of the Army Combined Arms Support Command (CASCOM) Training Directorate, the Army Quartermaster Center and School, and C2 Technologies. This course consists of three learning modules, one summary module, and a capstone exercise. It is geared to senior lieutenants and junior captains preparing to assume a command position but also provides invaluable training for leaders at all levels. In the near future, this course may become an integral part of BOLC III for all branches.

The course teaches the basics of supply and property accountability in the first two modules. The third module walks students through the supply procedures needed to deploy, sustain, and redeploy a unit. The fourth module summarizes the major points presented in the first three modules and leads into a capstone exercise where the student answers a series of scenario-based questions on the deployment and redeployment of a notional unit. This course can be found on the Army Learning Management System (ALMS) website. Go to ALMS by using the "My Training" option in Army Knowledge Online and searching for "property accountability" under "Catalog Search."

Another training initiative that has recently been fielded is the new Property Book Unit Supply Enhanced (PBUSE) training aids. These training aids are an enhancement of the existing job aids. While the original job aids were based on a "tell me" format, the new training aids have "tell me-show me-try it" functionality. These aids are embedded in the PBUSE program and can be accessed in two ways. First, immediately upon log-in, a Soldier can click on "Training" and review all of the modules. Second, a Soldier who is working on a particular transaction and is unsure of the next step can click on the "Training" button to open the training aid. Once the Soldier receives the reinforcement training, he can return to the exact spot where the training aid was originally accessed.

Each training aid module consists of four features. The first is a "tell me" document that graphically shows the procedure needed to complete the transaction. The next feature is the "show me" capability, which uses a multimedia presentation to demonstrate the process. The "try it" feature allows the user to interact with the program and execute the actual steps required to complete the transaction. The final feature is a short "check on learning" exercise that assesses the operator's understanding of the procedure needed to complete the transaction.

The Quartermaster Center and School is also developing commander's guides that deal with the various functional areas within the Quartermaster branch. The first one, which is soon to be completed, is the Commander's Guide to the Command Supply Discipline Program. This guide will provide commanders at all levels with the knowledge and tools to implement their command supply discipline program without having to read through Army supply regulations to retrieve the information that applies to their programs. Guides for other functional areas, such as food service, aerial delivery, and petroleum and water operations, are currently under development. As each guide is completed, it is evaluated for the feasibility of developing a multimedia training course to complement the guide.

The potential for computer-based training to fill gaps in property accountability training caused by the contemporary operating environment and transformation is limitless. At the Quartermaster Center and School, we are in the process of updating existing training courses and evaluating the possibility of developing new ones. One such initiative is the development of a stand-alone, scenario-based PBUSE training package that will augment existing training aids. We are striving to maximize the use of technology to increase property accountability awareness and training for Soldiers of all branches to ensure that we are good stewards of Government funds. **ALOG**

CHIEF WARRANT OFFICER (W-5) DAVID A. DICKSON IS THE QUARTERMASTER WARRANT OFFICER PROONENT MANAGER IN THE OFFICE OF THE QUARTERMASTER GENERAL, ARMY QUARTERMASTER CENTER AND SCHOOL, AT FORT LEE, VIRGINIA.

AMC Repair Parts Supply Chain

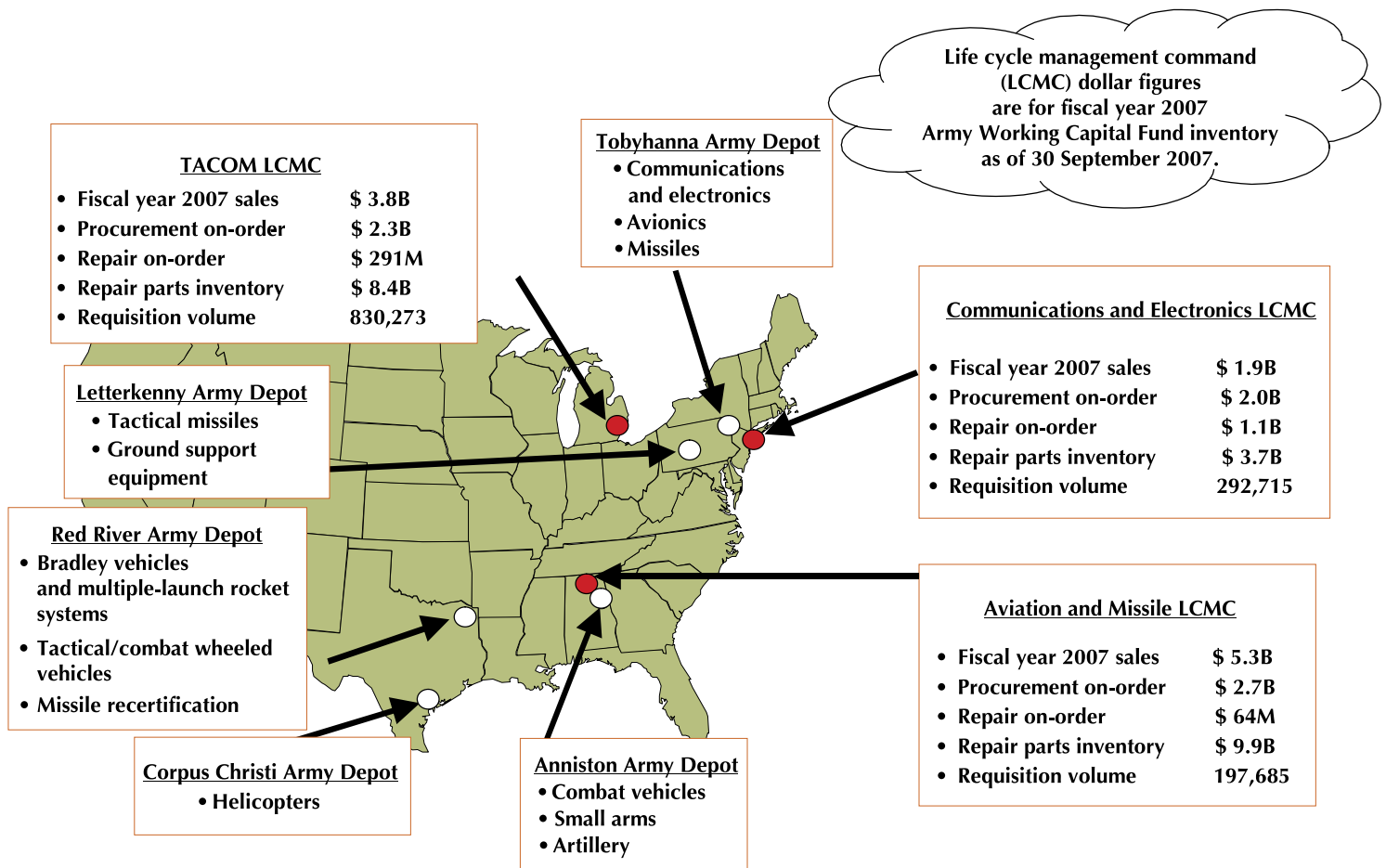
BY JOHN T. LAFALCE

The Department of Defense (DOD) operates 11 primary logistics and acquisition management centers to equip and sustain its global operations. The Army and Air Force each operate three of these centers, while the Navy and Marine Corps operate one apiece. The remaining three centers are elements of the Defense Logistics Agency (DLA), which manages inventory items common to multiple military services. The dollar value of the repair parts inventories that the 11 centers manage is over \$80 billion. The inventories are constantly in motion, flowing from manufacturers to storage locations, to military units, to repair facilities, and then finally to disposal activities. This large and expensive network of personnel, facilities, and repair parts is DOD's logistics supply chain, and it is critical to the operational success of the U.S. military.

In 1990, the Government Accountability Office (GAO) declared that DOD's supply chain transformation (SCT) was a high-risk endeavor. GAO deems a program high risk if at least \$1 billion is at risk, if national security is at stake, and if major agency assets could be lost, stolen, damaged, wasted, or underutilized. DOD's bottom-line goal for SCT is to provide better support to its customers at reduced total operating costs. "Providing better support" means accurately forecasting the customers' needs and ensuring that a quality product or service is available when the customer needs it. "At reduced operating costs" alludes to shrinking the \$150 billion that DOD spends annually on its supply chain overhead.

GAO has accurately identified DOD SCT as a high-risk endeavor for several reasons. The first is the large dollar value (\$42 billion) and the large number of

This chart shows some of the Army Materiel Command's life cycle management commands and depots.



- The AMC national maintenance network also includes many other (smaller) repair facilities that are not shown.
- Source of Army Working Capital Fund inventory data is fourth quarter fiscal year 2007 budget stratification and military supply and transportation and evaluation procedures data.

contracts (over 253,000) for DOD repair parts procurement (based on fiscal year 2005 data). Another is that the mammoth bureaucracies operating each of DOD's services are slow to embrace new ways of doing business. Probably the biggest reason that SCT is high risk is that it is just one of many large and interconnected modernization efforts underway in DOD. The good news is that the private sector has proven that large-scale SCT is possible, it leads to improved customer support, and it makes the business enterprise more efficient.

Repair Parts Management at AMC

The Army Materiel Command's (AMC's) portion of the \$80 billion DOD repair parts inventory is valued at about \$22 billion. The inventory primarily comprises class IX repair parts, as categorized by the Federal Supply Catalog System. Supply logisticians divide the class IX inventory into consumable repair parts and reparable (spare) parts, but in this article, class IX parts will include both consumable and reparable items. Class IX items are the parts and assemblies required to maintain the trucks, radios, helicopters, missiles, armaments, and other weapon systems that AMC manages.

AMC is headquartered at Fort Belvoir, Virginia, and operates several life cycle management commands (LCMCs) and five primary maintenance depots. The chart at left provides an abbreviated overview of AMC's extensive global operations and focuses on the LCMCs that have the greatest impact on the class IX supply chain.

AMC assigns a group of repair parts to one employee called an item manager (IM). Each group of items is usually unique to one weapon system, and the IM is responsible for maintaining adequate stock levels to fill any worldwide demand for his assigned items. The number of items each IM oversees varies from fewer than 100 to several thousand, depending on the IM's experience and the complexity of the assigned items. The IMs at AMC manage 108,818 items, about a third of which are routinely procured, repaired, and

issued. These "active" items are the ones that consume the bulk of the IM's workday. The remainder of the AMC inventory comprises low-demand, insurance, war reserve, and other "inactive" items that are relatively less time-consuming for an IM to manage.

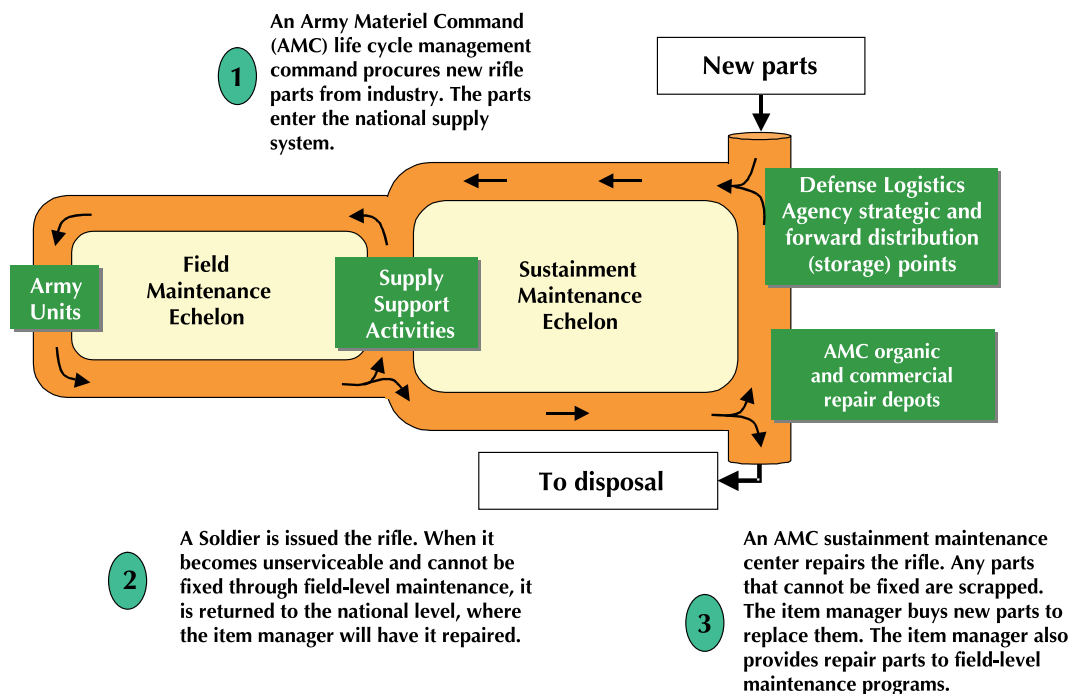
The inventory pipeline illustrated in the chart below explains both the life cycle of a repair part and the echelons of AMC's supply and maintenance operations. New parts are procured from industry using the Army Working Capital Fund (AWCF). They enter the DOD supply system when they arrive at one of DLA's strategic (or forward) distribution depots. The bulk of AMC's national-level repair parts inventory is stored at this echelon of supply.

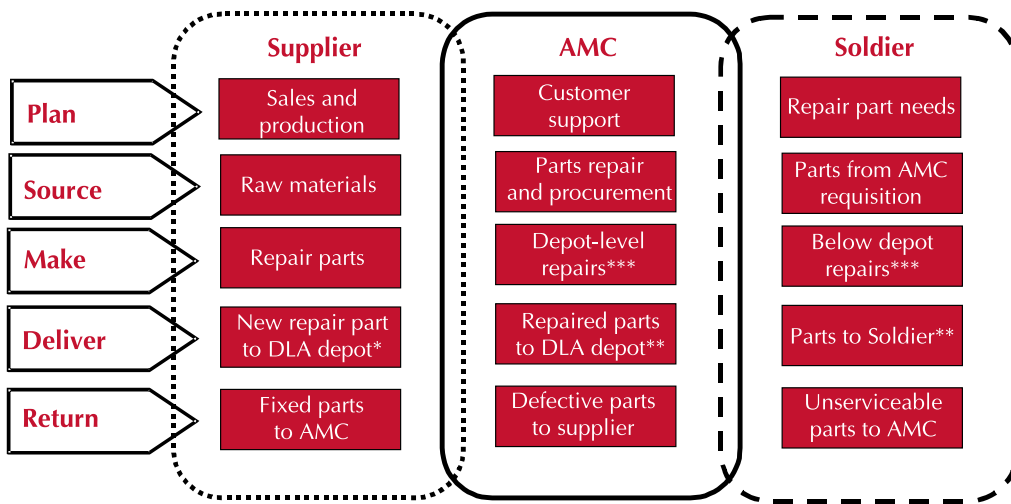
The next echelon in the supply pipeline comprises a global network of hundreds of supply support activity (SSA) warehouses that are colocated with the Army theater, brigade, battalion, and regimental units that they support. The strategic distribution depot and SSA echelons have one source of funds (the AWCF), designated managers for worldwide procurement and repair actions (the LCMC IMs), and one point of sale (when issued from the SSA).

The third echelon of supply comprises thousands of prescribed load lists (PLLs) that are owned and maintained at the unit level. While some SSA inventories can be deployed, all PLLs are intended to be mobile and thus are restricted to the minimum essential items required to support near-term tactical and training operations. Repair parts that are in use and become unserviceable are processed through the supply pipeline to the appropriate echelon of repair. When the item can no longer be fixed, the IM will issue a disposal order to remove it from the supply chain.

Like other military components, AMC is in the process of replacing its legacy LCMC repair parts

This inventory pipeline explains the life cycle of a repair part and the echelons of the Army Materiel Command's (AMC's) supply and maintenance operations, but it omits important events that must happen before AMC obtains the repair part and after it issues the part.





- * Repair parts enter the AMC supply chain here.
 ** Unserviceable consumable items are disposed of here.
 *** Repairable unserviceables that are beyond repair capabilities are disposed of here.

Legend

AMC = Army Materiel Command

DLA = Defense Logistics Agency

management system with a commercial enterprise resource planning (ERP) system. AMC's effort is called the Logistics Modernization Program (LMP) and is managed by the Army's Program Executive Office for Enterprise Information Systems. The LMP is operational at the Army Communications-Electronic Command (CECOM) and Tobyhanna Army Depot, Pennsylvania. The Army Aviation and Missile Command (AMCOM) and its two depots are currently fielding the LMP. The Army TACOM LCMC and its two depots will begin using LMP after 2009.

Successful use of LMP requires both organizational realignment and rigid data management. Both of these changes will benefit SCT efforts. Another SCT benefit that LMP offers is more accurate repair parts forecasting through the use of the ERP materiel requirements planning module. LMP-induced organizational, operational, and data management changes continue to be developed, tested, and refined at CECOM for eventual use by the rest of AMC.

Supply Chain Models

In the chart on page 3, the pipeline depiction of the supply chain omits important events that must happen before AMC obtains the repair part and after it issues the part. The pipeline focuses primarily on what happens within the command and gives little emphasis to the effects of AMC operations on its suppliers and customers. Until recently, this was standard practice at all 11 primary DOD logistics and acquisition management centers, but AMC is modifying this to take a more holistic approach to managing its repair parts supply chains.

The Supply Chain Council developed the industry standard Supply Chain Operations Reference (SCOR)

Each major link in the overall supply chain has its own internal supply chain to manage. But each of the three separate supply chains is inexorably linked into one larger supply chain, symbolizing that actions taken by one of the three major links will eventually impact the other two.

model, which uses an enterprise-wide approach to analyzing supply networks. The model is divided into five level-1 processes: plan, source, make, deliver, and return. Any entity operating a supply chain must perform each of the level-1 processes to some degree. The chart at left converts the myopic,

AMC-centric Army repair parts pipeline in the chart on page 3 to one based on the construct of the SCOR model. The most important feature in the illustration is that each major link in the overall supply chain (suppliers, AMC, and Army customers) has its own internal supply chain to manage. However each of the three separate supply chains is inexorably linked into one larger supply chain that extends from the "factory to the foxhole." This symbolizes that actions taken (or not taken) by one of the three major links will eventually impact the other two.

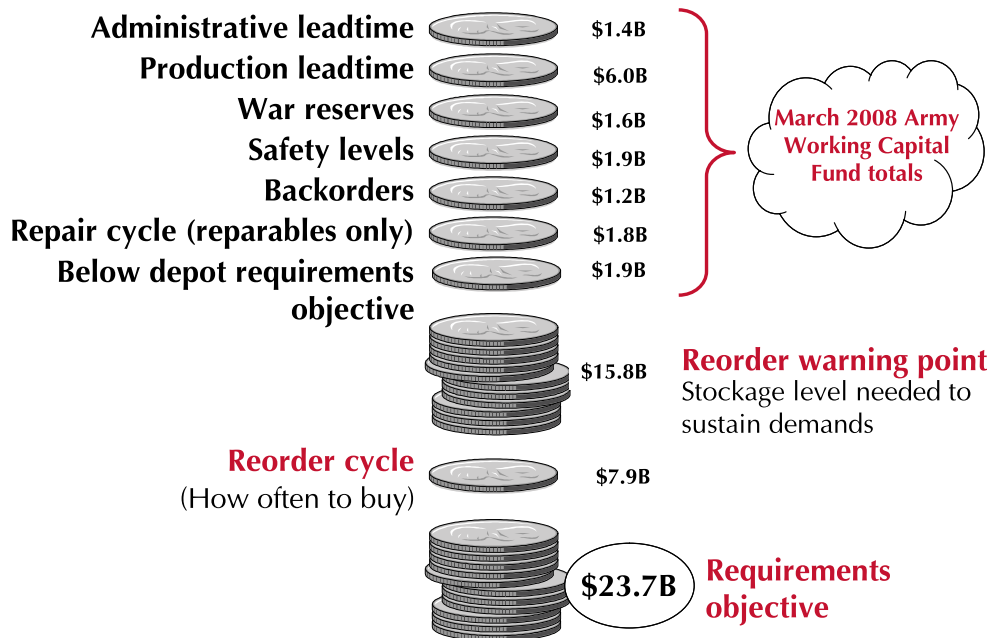
AMC's Spare Parts Planning Process

At AMC, the IM performs the SCOR model sustainment planning function through the automated requirements determination and budget stratification processes. The AMC legacy and LMP systems compute requirements levels for each repair part based on historical demand rates, management parameters, preplanned demands, and various mathematical models that compute war reserve, safety stock, retention, and economic order quantities. When the sum of on-hand, on-order, and due-in inventory breaches reorder points that are computed uniquely for each repair part, the IM initiates procurement or repair requests for the appropriate quantity of stock.

The chart at top right shows the cumulative financial impact of this planning process for the entire AMC AWCf repair parts inventory. The net result is that the current planning process is very expensive (total requirements of \$23.7 billion) and is slow to react to changing customer requirements because of the reliance on historical demand rates and lengthy procurement leadtimes. A safety level requirement of \$1.9 billion is calculated to achieve an overall stock availability rate of 85 percent for all active weapon systems.

This chart shows the cumulative financial impact of the Army Materiel Command's spare parts planning process.

This means that Army Soldiers have their repair parts requisitions filled about 85 percent of the time. The remaining 15 percent of requisitions will generally be placed on back-order status. Some weapon systems attain a higher stock availability rate, but it is cost prohibitive for AMC to attempt to attain a customer service level above 85 percent using its current planning processes because the safety level investment would have to be much larger.



Improvements to the AMC Planning Process

When an AMC IM initiates a purchase request, the documentation flows through engineering, acquisition, legal, small business, and other offices within each LCMC. The purchase request process includes assembling a technical data package, developing an acquisition strategy, soliciting proposals from industry, negotiating (if applicable), reviewing, and finally awarding the contract or purchase order. This administrative processing overhead is called administrative lead time (ALT) and is the source of the \$1.4 billion ALT component of the AMC requirements objective in the chart above.

Streamlining ALTs was one of the first dedicated, command-wide efforts to improve AMC supply chain planning procedures. AMC used integrated teams, value stream analysis, kaizen events, new data management systems, and other continuous process improvement efforts to reduce ALTs. [Kaizen is a Japanese philosophy aimed at continuously improving all aspects of life or business.] However, most of the reductions can be attributed to ALT preplanning and the use of long-term contracts.

Preplanning involves doing much of the ALT processing steps before the IM generates a purchase request rather than afterward. This saves time because preplanning the ALT is a one-time investment that will be reused for future procurements. Long-term contracts cover timeframes of up to 5 years and have minimum and maximum total quantities. After a contract is established, successive purchase requests from the IM are quickly placed on delivery orders to the established long-term contract. Early success with this ALT reduction effort has led to the award of even larger long-term contracts that consolidate multiple repair parts procurements (from a few to hundreds) into single contracts.

Reducing procurement ALT brings multiple benefits to AMC's repair parts planning process. For one, it allows the command to provide better support to the Army by quickly acquiring new repair parts and depot-level repair services. Reducing ALT also lowers LCMC administrative overhead costs, which in turn helps to lower the AWCFS surcharge paid by AMC customers. ALT reduction also provides a multibillion-dollar cost avoidance to the Federal Government.

Another benefit is that the expanded use of long-term contracts has helped to link AMC's repair parts supply chain to that of its suppliers. This is because long-term contracts give suppliers better visibility of AMC's future demands, thus allowing them to plan and source their future production levels.

AMC Spare Parts Sourcing Processes

Sourcing is the procurement and transfer of raw materials, products, and services. AMC IMs have several options for sourcing repair parts. The first option is always to repair unserviceable assets if they are available in adequate quantities. Repair programs are continuously underway at organic AMC depots, other military service depots, and commercial repair facilities. The chart above shows that the revolving dollar value of the depot repair requirement is about \$1.8 billion. In urgent situations, the IM has the option of tasking AMC maintenance depots to fabricate a part or cannibalize it from a next-higher assembly. Outside of the IM's sphere of control, and on an exception basis, AMC maintenance depots are authorized to procure repair parts locally from commercial sources in order to keep depot production lines flowing.

When the above sourcing options have been exhausted, the IM procures new repair parts from industry by initiating a purchase request. In fiscal year 2008, AMC

obligated about \$4.4 billion from the AWCf to buy new repair parts from industry to meet the Army's daily weapon system sustainment needs. Most of AMC's repair parts are procured through traditional tactical processes. These procurements are termed "tactical" because purchase requests are generated one-at-a-time and are processed as stand-alone and independent entities. The introduction of long-term contracts was the first step in AMC's migration from tactical to "strategic" sourcing.

Strategic Sourcing

In May 2005, the Office of Management and Budget (OMB) directed all Federal agencies to develop and implement strategic sourcing capabilities. The TACOM, CECOM, and AMCOM acquisition centers all used rudimentary strategic sourcing procurement methods before the OMB directive, but these local efforts were not standardized, integrated, or measured across AMC. To comply with the OMB guidance and develop more sophisticated strategic sourcing capabilities for the entire command, AMC launched a 1-year purchasing and supply management pilot program at AMCOM in September 2006.

The RAND Arroyo Center recommended beginning the purchasing and supply management pilot by first conducting a "spend analysis" to rationalize consolidating future contracts. A spend analysis reviews how procurement funds were spent in the past. For example, RAND reviewed how the Army spent \$60.5 billion on goods and services in fiscal year 2003 and found the following:

- The purchases were made by 244 procurement offices.
- 88,013 contracts were awarded to 35,517 companies.
- One in three companies had multiple Army contracts.
- Many of the Army's procurement offices had multiple contracts with one company.
- Forty-two percent of the dollars spent (and 35 percent of the contracts awarded) were restricted to 1 company.

These data suggest that there were opportunities to reduce prices, ALT, and production leadtime and that current tactical sourcing processes were not exploiting these opportunities. The spend analysis data highlighted which repair parts were the best candidates for consolidation into fewer larger-dollar-value contracts in the future and which vendors were likely to compete for those contracts.

Analyzing past procurement spending data to rationalize future contract obligations can also reduce administrative costs to both the Army and its vendors because purchase request solicitation processing and the contract administration workload will be reduced. This is especially true when contracts are consoli-

dated for multiple repair parts from multiple weapon systems and from multiple AMC acquisition centers. The Defense Base Closure and Realignment (BRAC) Commission aims to maximize this consolidation of repair parts sourcing across DOD. The 2005 BRAC Report directs the military components to better manage DOD's spending by consolidating Army, Navy, Air Force, and Marine Corps depot-level reparable item procurements.

After analyzing procurement and rationalizing the supplier base, RAND recommends establishing long-term partnerships with the best suppliers. The goal of the partnerships is to help vendors improve quality, cost, and services by integrating them into the AMC spare parts management supply chain. The AMCOM acquisition center has implemented the RAND guidance by forming strategic relationships with about a dozen of its key vendors. AMCOM hosts semiannual conferences with these suppliers and tracks their performance with a supplier management scorecard. The scorecard measures progress toward attainment of key metrics, such as reducing ALT, production leadtime, shipment delinquencies, proposal turnaround time, and the number of spare parts in a critical supply posture. AMCOM targets contracts with these key firms for delivery, capacity, cost, performance, and other incentives.

Caterpillar Corporation SCT

In 1925, Benjamin Holt and Daniel Best consolidated their respective tractor and earthmoving equipment companies to form the Caterpillar Corporation. Today, the company operates 50 U.S. and 60 foreign manufacturing facilities and has annual sales of over \$45 billion. Caterpillar Logistics Services, Inc. (Cat Logistics), supplies a network of 186 dealers and 1,755 rental stores with spare parts from 22 distribution centers located around the world.

The company's spare parts logistics operations have a number of similarities to AMC's. For example, Cat Logistics' spare parts mantra is the same as AMC's: The right part to the right place at the right time. The company offers over 100,000 parts, the majority of which are nonstocked because of low demand rates and the age of the equipment they are designed to repair. When ordered by dealers, these nonstocked items are procured or fabricated as required (AMC provides similar services to its customers). Like AMC, Cat Logistics is converting from using a proprietary legacy inventory management system to commercial ERP products.

However, unlike AMC, Caterpillar's fill rate for active, fast-moving parts (defined as 350 or more demands per year) is 98 percent. As an example of the company's spare parts velocity, the flagship 2.2-million-square-foot distribution center in Morton, Illinois, stocks about 430,000 individual parts and ships around

60,000 parts per day. This includes roughly 7,500 lines (individual item counts) on emergency orders for which delivery is guaranteed within 24 hours.

Things were not always rosy at Caterpillar. The company faced union unrest and financial losses throughout the 1980s. In 1990, the company changed its overall corporate structure from a “functional bureaucratic” organization to a “profit center” organization. Decisionmaking authority was pushed downward, and new customer-focused performance metrics were introduced. In 2001, Caterpillar introduced its workforce to the Lean Six Sigma tenets of defining, measuring, analyzing, and controlling factory and administrative processes. The company now employs a cadre of full-time “black belt” and “master black belt” process analysts who focus on improving interfunctional business operations.

Conversion to Lean production process techniques began in 2004 to reduce waste and improve the flow of inventory and information. The company has named the culmination of these efforts the Caterpillar Production System (CPS). The results are impressive. For example, at its Morton factory, the company can produce and ship up to 14 high-quality, multiton, \$2 million-plus earthmovers per day. The finished-goods inventory is nonexistent because each machine is sold before it is produced. Part and component inventories are minimized by scheduling factory receipt just 1 day prior to induction to the moving assembly line.

DOD can benefit from studying Caterpillar’s transformation and adopting some of its successful change management strategies. Like DOD, Caterpillar has a large workforce: over 94,000 employees. Also like DOD, Caterpillar was a stodgy, inefficient, industrial bureaucracy. Yet in just 15 years, the company has morphed into an efficient, lean, and customer-focused organization.

Status of AMC’s Transformation

The command is currently transforming on multiple fronts. Large organizational changes have been underway with the Army Sustainment Command, the Military Surface Deployment and Distribution Command, and the Army Contracting Command. Under the 2005 BRAC report, CECOM will relocate to Aberdeen, Maryland, AMC will move to Huntsville, Alabama, and TACOM will relocate some of its employees from Rock Island, Illinois, to Detroit, Michigan.

AMC is also actively implementing Lean manufacturing and Six Sigma quality processes throughout the command. In fact, in just the past 3 years, AMC depots have been awarded 17 public sector Shingo Prizes for Operational Excellence by Utah State University. The conversion from legacy automated systems to the LMP is another large-scale transformation underway in AMC. This systemic change both requires and enables

additional organizational and process change.

Multiple efforts are underway to transform AMC’s spare parts supply chain. These include the projects mentioned in this article as well as performance-based logistics, contractor logistics support, depot partnering, and other initiatives. It is true that spare parts support is just one area of the command’s extensive global operations in support of the Army. However, changes to the spare parts supply chain have ripple effects that affect the command’s other major areas of operation. Therefore, SCT must be accomplished as a carefully planned and integrated component of the command’s overall materiel enterprise transformation efforts.

Recommendations for AMC SCT

Many of Caterpillar Corporation’s successful transformation efforts are currently being emulated in AMC, but not in a focused and holistic manner. Multiple initiatives are underway, but they are not focused on a unified and clearly articulated command-wide vision or SCT objective.

AMC is currently staffing a dedicated team of logistics and acquisition personnel to focus and coordinate its SCT activities. Following the example set by Caterpillar, the command should metaphorically assume the V-formation used by geese and ducks in flight. Command leadership will form the tip of the “V,” clearly communicating, enforcing, and measuring AMC’s journey toward achieving its long-term SCT vision and mission. The dedicated SCT team will focus on the operational attainment of program goals and objectives. Current AMC SCT efforts—leadtime reduction, purchasing and supply management, performance-based logistics, the SCOR model, BRAC consolidations, and depot partnerships—will form the two wings of the V-formation.

Synchronizing these efforts within the command and with suppliers, customers, and other DOD components will create synergistic benefits and unity of purpose. It will also enable SCT actions to be more uniformly integrated with overarching DOD transformation efforts, such as conversion to ERP systems and Lean Six Sigma process improvements. Aspiring to operate under transformed supply chain operations will result in all of these benefits, but most importantly, it will result in improved repair parts support to the Army and its Soldiers. **ALOG**

JOHN T. LAFALCE IS THE CHIEF OF THE SUPPLY CHAIN BRANCH OF THE ARMY MATERIEL COMMAND. HE HAS A B.S. DEGREE IN MANAGEMENT FROM THE UNIVERSITY OF KENTUCKY, AN M.S. DEGREE IN MANAGEMENT FROM TEXAS A&M UNIVERSITY, AND AN M.S. DEGREE IN NATIONAL INDUSTRIAL STRATEGY FROM THE INDUSTRIAL COLLEGE OF THE ARMED FORCES.

COB Speicher CRSP and Container Operations

BY FIRST LIEUTENANT CODY J. WHEATON

For 15 months, I was the officer in charge of the central receiving and shipping point (CRSP) and empty container collection point (ECCP) at Contingency Operating Base (COB) Speicher, Iraq. The two yards were run by a 41-person detachment. COB Speicher's logistics system was different from the other main hubs in Iraq, and this article describes the techniques used there during Operation Iraqi Freedom 07–09.

CRSP and ECCP Overview

Most CRSP yards service customers shipping full containers, rolling stock, pallets, and so forth. Anything, except for hazardous material items such as ammunition, moving intratheater by any ground mode goes to the CRSP. The CRSP does not usually service supply support activities (SSAs), although sometimes one or two containers slip in. Instead, the joint distribution center services SSAs and serves as a pallet-building location for all air shipments.

Most COBs keep their ECCP separate from the CRSP yard. The ECCP's sole purpose is to collect empty containers from customers and activities in order to get them back into circulation. With approval from Multi-National Corps-Iraq (MNC-I), the ECCP will also distribute containers to units for use as permanent storage and for redeployment.

COB Speicher has both a CRSP and an ECCP. All containers at COB Speicher, empty or full, go to the ECCP. All noncontainerized cargo traveling by ground mode goes to the CRSP. Since the Army has no formal guidance on the setup and function of a CRSP, this configuration is not necessarily right or wrong, but the technique has worked well at COB Speicher. That detachment found that the most efficient setup was to have the yards right next to each other. This made tracking easier and cut down on overall manpower needs.

Speicher CRSP

Operations at the Speicher CRSP were simple. When a convoy came in to drop something off, the convoy commander had a transportation movement request (TMR) with all the information needed for processing the cargo. The TMR included the sender's and recipient's contact information in case of a problem with the shipment and stated the load's contents, origin, destina-

tion, and any special instructions. After the CRSP non-commissioned officer in charge verified that the cargo matched up with the TMR, he signed for the load from the driver and offloaded the cargo.

When a convoy came to pick up a load, the convoy commander brought a copy of the TMR for the shipment that the unit would be receiving. The cargo was uploaded, the convoy commander signed the original TMR for all the equipment, and a copy was made for record. When an on-post unit wanted to pick up a shipment, it submitted a local TMR and signed for the load, just as a convoy moving cargo intratheater would.

For storing cargo, it really did not matter how the yard was laid out as long as the cargo was stored according to TMR so that all equipment from each TMR was kept together. This expedited service when somebody came to pick up a TMR, and it helped with inventories.

Although the convoy commanders always signed for all the cargo and equipment they were loading or offloading, CRSP personnel did a 100-percent inventory once a day to ensure accountability. It was much easier to go through 24-hours worth of activity if a discrepancy was found than to wait for an investigating officer to show up 6 months later.

CRSP Security

Security was a big issue when we first arrived. CRSP personnel were responsible for accounting for the major end items and taking reasonable steps to deter pilferage. However, items contained inside vehicles were not the responsibility of the yard personnel; if a unit chose to secure sensitive items in its vehicles, it did so at its own risk.

When the detachment first arrived at COB Speicher, only one side of the yard had a fence. Because of the lack of security in the yard, one truck had so many parts stolen from it that the vehicle was turned in for reset. Other units also tried to drive their vehicles out of the yard under cover of darkness. To fix this, we found concertina wire at the dump to fence in the rest of the yard so that the CRSP had only one entrance. At first glance, one might think having one entrance that doubled as an exit would lead to a traffic issue, but this never presented a problem. The items being moved through the CRSP were only a portion of all cargo

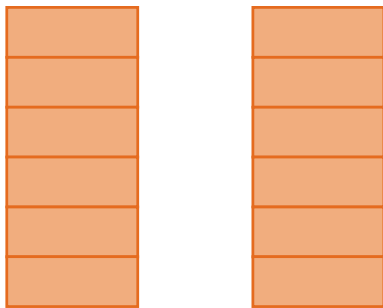


Figure 1

These figures illustrate aerial views of possible configurations for storing containers in a container yard. The configuration used depends on the amount of space available and container traffic.

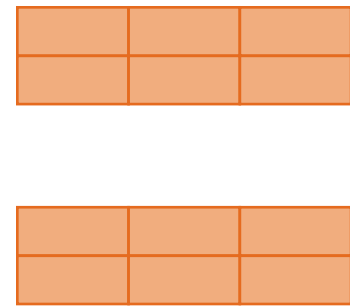


Figure 2

shipped in theater. A busy day was three large convoys (with 30-plus vehicles each).

Speicher ECCP

The ECCP was a little more complicated to operate than the CRSP. This was mostly due to the extra management of containers at theater level and the maintenance requirements of the RT-240 rough-terrain container handler (RTCH). (A quick note on the RTCH: Everyone wants to use your RTCH at some point. They dream up all kinds of stuff for it to do, but the only thing the RTCH can do is pick up containers and empty flat racks. It is not rated or designed for anything else.)

The ECCP operation was straightforward. Convoys dropped off and picked up containers in the same way they did at the CRSP. The only difference was that, until “processing” was complete, we kept containers that were being dropped off separated from containers already in the yard. After processing was complete, we put them away in the yard.

Container Processing

Processing is the paperwork side of a container yard operation. The Department of Defense has a system, called the Container Management Support Tool (CMST), for tracking every container the military uses. This system tracks a multitude of data about a container after it is entered into the system. Every container that comes into the yard is checked into the yard, or “ingated,” using CMST. This gives MNC-I visibility of every container in theater. When a CMST operator ingates a container, he can see a lot of information about the history of the container in addition to the information listed on the TMR. This information is important to the ECCP because only containers with certain ownership codes can be issued to units requesting empty containers for storage or intratheater shipment.

Occasionally, containers that are not in the system turn up, but it is easy to add them to CMST. It is mandatory that all containers be inventoried monthly and the results entered into CMST. The unprocessed containers are stored separately because occasionally the information in CMST will not correspond with the container on the ground. Not having to search the yard for the container makes it easier to resolve any discrepancies.

The layout of a container yard should be based on the amount of space available and container traffic. With limited space, storing containers as shown in Figure 1, at left, is optimal. It takes longer for the RTCH operators to store containers stacked in this manner, and putting a container in an empty slot takes a lot of skill. Placement as shown in Figure 2, at right, is much easier. If you have the time to spare and the right equipment, choose the first method every time because it forces operators to become more proficient.

Words of Advice for CRSP and ECCP Leaders

Never let anyone into any container once it is in your possession. It is okay to say no to someone who accidentally packed his sleeping bag in the redeployment container. Our policy was no one opens a container without a memo from our brigade.

Do not allow anyone to drop off anything for shipment without a TMR in hand taking that equipment off post. Do not listen to a promise that a TMR will be done as soon as they leave the yard. It is doubtful you will ever see them again. As far as they are concerned, it is your problem now.

As soon as you get on ground, find the point of contact for the support operations transportation shops that are assigned to pull stuff from your yards. Sometimes, TMRs get lost in the system and pieces of equipment will sit in the yard indefinitely.

The separate CRSP, ECCP, and joint distribution center worked well; however, the operation is changing for the better. A new corps distribution center is near completion that will include the CRSP, ECCP, and joint distribution center. It will be located adjacent to the movement control team to allow customers a one-stop terminal for all their transportation needs. **ALOG**

FIRST LIEUTENANT CODY J. WHEATON IS ASSIGNED TO THE 372D INLAND CARGO TRANSFER COMPANY. HE WAS THE CENTRAL RECEIVING AND SHIPPING POINT AND EMPTY CONTAINER COLLECTION POINT OFFICER-IN-CHARGE AT CONTINGENCY OPERATING BASE SPEICHER, IRAQ, WHEN HE WROTE THIS ARTICLE. HE HOLDS A B.S. DEGREE IN MECHANICAL ENGINEERING FROM THE UNIVERSITY OF UTAH AND IS A GRADUATE OF THE TRANSPORTATION OFFICER BASIC COURSE, THE AIRBORNE SCHOOL, AND THE RANGER SCHOOL.

Medical Logistics: Notes From Iraq

BY FIRST LIEUTENANT J. MARK FRANKLIN

Army healthcare providers depend on medical logisticians to get the right materiel to them in a timely manner so that they can provide adequate care for the Soldiers in their units. To do this correctly, logisticians must know their customers and foresee their future needs to ensure that items are readily available. This is not a problem in garrison, but it can be complicated when working in an austere environment.

The Army's training courses for medical logisticians provide an overview of this demanding field, but nothing compares to on-the-job experience. When I arrived at my unit, I was assigned to supervise a regimental medical supply office (RMSO) in the 3d Armored Cavalry Regiment. It consisted of five military occupational specialty (MOS) 68J medical logistics specialists (three of whom were noncommissioned officers [NCOs]) and one MOS 68A medical equipment repairer. We were responsible for supplying more than 77 customers across northern Iraq. These customers included two level II and five level I aid stations. The RMSO maintained 171 lines of stock and processed approximately 800 orders per month.

While preparing for deployment, I was unsure of what to expect when my unit arrived in Iraq. Would I have enough bandages? How long would it take to get resupplied? What could I do to make my team more productive and customer focused? Now, looking back on the deployment, I see that I made some good decisions and some that reflected my lack of experience. Having learned many things the hard way, my goal is to pass on my experience to help other new medical logisticians in future deployments to Iraq.

Prepare for the Worst

We used our requisitioning history to develop a packing list for the deployment. My office packed a BOH Environmental field pack-up (FPU) storage container system and shared a 20-foot military-owned demountable container (MILVAN) with our headquarters element. The FPU has shelves and drawers that are useful for the small items like bottled medications and fragile items. (I highly recommend that all medical supply offices have at least one of these containers.) The bulk items were placed in white Tri-Wall containers in the MILVAN. We brought eight of these containers full of IV [intravenous] fluid, combat tourniquets, and emergency bandages. The Tri-Walls are good not only for transport; we used them

as customer pick-up boxes as well.

Even though we had received an authorized stockage list (ASL) from the unit we were replacing, the list did not seem to include the items my customers were using during training at the National Training Center at Fort Irwin, California. While the supplies we brought ensured our preparedness, the quantity was excessive. When we arrived in Iraq, we found that certain items that were bulky and expected to be in high demand were in excess at the warehouse and customer levels. I suggest that future units limit their load to just the FPU container. The Iraqi theater of operations has matured in its logistics capabilities, and now, once the medical supply account is established, ASL items arrive 7 to 10 days from the order date.

ASL

Every customer should be given a copy of the ASL and the theater formulary. The customer must understand the importance of using the national stock numbers provided for stocked items when ordering. Items that are not on the list will take an extremely long time to arrive, if at all. The theater also has a list of restricted items, such as litters, aid bags, and headlamps, that require letters of justification to order, so medical supply offices and their customers should stock up on these items before leaving home station. We ordered more than 200 litters, half of which we distributed to our customers before deployment. We used the rest for blocking and bracing the other MILVANs. Various transition teams needed litters, and our ability to supply them without lengthy administrative procedures ensured their mission readiness and helped establish a rapport that lasted for the duration of the deployment.

The ASL that we acquired upon arrival in Iraq needed much work. The warehouse was disorganized and had too many lines. Many of the medications on the shelf were either expired or covered in dust, making them unusable. We built additional shelving and placed shower curtains over the medications to help keep them clean. By performing a 100-percent inventory, using location cards, and watching our requisitions, we were able to reduce the inventory by more than 53 percent in the first 4 months. Because we are more streamlined, we continually see a demand satisfaction rate of over 98 percent.

Automated Ordering Systems

We hit the ground prepared to use the Defense Medical Logistics Standard Support Customer Assistance Module (DCAM). But we discovered that our supplier was still using the older Theater Army Medical Management and Information System. To complicate matters, we had no Internet connection during the transition period. Once connectivity was established, the fielding team for DCAM converted our systems to run the program. This system still had minor imperfections but allowed us to order supplies efficiently. Most of our customers did not have the computers or bandwidth to place orders in DCAM, so we accepted manual requisitions using Department of the Army Form 3161, Request for Issue or Turn-in, and inputted the orders into the system at the RMSO level, which reduced our ability to accomplish other tasks.

With so many different customers, we found it challenging to track their orders just using standard document numbers. Staff Sergeant Anthony Louis and Sergeant Tyron Hale, my office managers, devised and implemented a coding system using customer and order numbers. For example, customer number 25's first ordered item would be coded 2501 and the next item would be 2502. Then, as we received an item from the forward distribution team, we clearly marked the document number on the item's box as we inventoried it from the materiel release order, which made it easier to sort the items and place them in the customers' pick-up boxes in the warehouse.

Medical Maintenance

I had the most to learn about medical maintenance. The amount of emphasis placed on medical maintenance during training is inadequate at all levels for the challenges encountered by a brigade or RMSO. The RMSO is authorized one biomedical technician, and ours was assigned directly from advanced individual training. These technicians are taught the fundamentals of repairing equipment but not about standing up a shop at the RMSO level. They mostly learn about hospital maintenance, and they typically are supervised by a senior medical maintenance NCO or warrant officer.

Two 3d Armored Cavalry Regiment Soldiers empty a BOH Environmental field pack-up container in Iraq.



The hardest part of maintenance, however, was stressing to the customer the importance of preventive maintenance on the equipment. Many of the items were damaged because of a lack of regular maintenance or user error, such as plugging the equipment into a 220-volt outlet. In order to educate customers on issues encountered at the user level, I would travel with my technician to the different aid stations to ensure the operators knew the proper guidelines and had the operating manuals.

Although never before authorized at the regimental or brigade level, we established an operational readiness float (ORF) program for maintenance and calibrations above the user level. We initiated the program by requesting excess older medical equipment from our higher echelon. With this excess equipment, we were able to provide customers with immediate temporary replacements while we made repairs to inoperative machines. Even though the pieces of ORF equipment were not exact replacements, this program allowed customers to maintain their mission readiness while waiting on repair parts.

Administrative Organization

Organization is essential to running a successful medical supply office, so we implemented several tools to help conduct daily business.

Medical logistics operations board. I mounted an operations board on the wall of the main office as a daily focal point for the entire shop. In the middle of the board, I placed a map of Iraq with the customers' locations to give everyone a picture of who we were supporting and where. To the sides of the map were different trackers, such as personnel and equipment assets and statuses, supply pushes, deadlined medical equipment, parts on order, and outstanding letters of justification.

Medical logistics operations binder. I created an RMSO production binder (similar to a leader's book) and placed in it the same trackers posted on the operations

board. I reviewed the binder with my team almost daily, penciling in changes and following up on outstanding critical items. This process helped keep my team focused on the customer in a rapidly changing environment. Formats for this tool can be found on Army Knowledge Online at <https://www.us.army.mil/suite/kc/11770385>.

Time management. Staff Sergeant Louis established and posted office hours. We found that customers would come in at their convenience, making it difficult for us to make our runs to the forward distribution team, perform vehicle maintenance, and place orders in DCAM. So we established the hours of 0900 to 1200 for customer requisitioning and pick up and reserved the afternoons for office administration and maintenance. Once we posted and advertised these hours, we began to see a great improvement in our effectiveness and efficiency. Customers who were unable to adhere to the standard hours were always welcome to schedule appointments with the RMSO. Posting office hours would have been even more effective if we had done it early in the deployment.

Even though they are basic administrative ideals for any office, these simple tools were absolutely beneficial while we were deployed.

Other Recommendations

The following is a list of recommendations to help a new medical logistician.

1. Find a copy of *The Division Medical Supply Office Handbook* that was published by the Academy of Health Sciences in March 1989. Read it cover-to-cover and reference it often. Although this book is almost 20 years old, I used it almost every week.

2. As a new medical logistician, listen to the NCOs who are assigned to your shop. Most have worked in this field for a long time and have a lot of experience. I am constantly learning from mine. Remember that they are the backbone of the Army and will help make the mission a success.

3. Create a good relationship with your commander. As the only medical logistician in your brigade or regiment, it is imperative that you help him understand your shop's mission. My staff occasionally received taskings by the command that hindered the RMSO's missions. As the relationship grew between the command and the RMSO, these problems were reduced drastically.

4. The medical supply office needs at least one biomedical maintenance NCO and one MOS 68A Soldier at E-4 level or below. A more field-experienced maintenance technician would have been great to have, not only for management but also as a mentor for the junior technician. This was not an option for our office, so when my technician arrived at the unit, my command allowed him to work at the hospital with the senior

technicians before we deployed. This was a good learning experience for him, and he also created a network for when he needed advanced technical advice.

5. Have your shop personnel take the combat lifesaver course and some of the medical sergeant's time training. This will help them better understand the materiel they are providing to the customer and will help build rapport. It may also help in providing substitutes for certain items that may not be stocked.

6. If you are able to attend the logistics course before taking over a shop, pay close attention to the student presentations, particularly if someone's presentation is about Lean Six Sigma. I had to research and present on the Lean Six Sigma principles during my course, and now I find that I am constantly using the ideas for my job.

7. Try to create a benchstock of medical maintenance parts based on your modification table of organization and equipment and the assigned equipment at the regimental or brigade level before you deploy. The senior biomedical technicians at home station and the Army Medical Materiel Agency's website, www.usamma.army.mil, are great resources for building your benchstock. If we would have had these parts on arrival in theater, they would have saved my technician and customers numerous weeks waiting on supplies.

8. Continue to take Defense Acquisition University courses. I recommend that you also have your NCOs take some courses. These free online courses helped me fully understand and convey the process of acquiring and supporting new equipment to my customers.

I hope that through my growing pains of predeployment and deployment, I can help new medical logisticians. Some of these basic techniques are probably being practiced by other medical offices throughout the Army. I just want to share what I learned through test and trial and hopefully save someone many hours of frustration. Finally, if you stay customer focused, all else should be easy.

ALOG

FIRST LIEUTENANT J. MARK FRANKLIN IS THE REGIMENTAL MEDICAL SUPPLY OFFICER FOR THE 3D ARMORED CAVALRY REGIMENT, WHICH IS DEPLOYED TO IRAQ IN SUPPORT OF OPERATION IRAQI FREEDOM. HE HOLDS A B.S. DEGREE IN ORGANIZATIONAL LEADERSHIP FROM SOUTHERN NAZARENE UNIVERSITY AND A MASTER'S DEGREE IN HUMAN RELATIONS FROM THE UNIVERSITY OF OKLAHOMA, AND HE IS CURRENTLY PURSUING A DOCTORATE IN MANAGEMENT FROM THE UNIVERSITY OF PHOENIX. HE IS A GRADUATE OF THE MEDICAL OFFICER BASIC COURSE, HEALTH SERVICES MATERIEL COURSE, AND PHASE I OF THE ARMY MEDICAL DEPARTMENT CAPTAINS CAREER COURSE.



Medical Logistics Transformation in Korea

BY COLONEL JAMES G. JOLISSAINT,
LIEUTENANT COLONEL THOMAS C. SLADE,
AND MAJOR DAVID L. SLONIKER

A Soldier with the U.S. Army Medical Materiel Center-Korea thaws and deglycerizes frozen blood.

Over the last 2 years, a series of organizational changes has resulted in a significant transformation of military medicine in Korea. The establishment of a provisional Army Medical Department activity (MEDDAC), Army dental activity (DENTAC), and Army district veterinary command (DVC) is improving the quality of life of service members and their families on the Korean peninsula. On the operational side, the transformation of the 18th Medical Command (MEDCOM) Headquarters (Korea) to the 65th Medical Brigade (Korea) has enhanced modularity and provided the warfighting commander with greater ability to tailor specific medical capabilities under multifunctional medical command and control elements. As operational medical units are being restructured, the Army medical logistics community continues to provide support to both operational medical units and institutional healthcare organizations. The activation of the U.S. Army Medical Materiel Center-Korea (USAMMC-K) established the crucial link between strategic and operational medical logistics units needed to create a single business framework during both peacetime (under the Korean armistice) and wartime.

A New Medical Structure in Korea

Activating the MEDDAC, DENTAC, and DVC, under a memorandum of agreement signed by the commander of the Eighth U.S. Army, Lieutenant General David Valcourt, and the commander of the Army Medical Command, Major General Gail Pollock, on 2 November 2007, was the starting block for Korea's medical transformation. As a direct result of this memorandum, medical commanders will no longer be required to plead for augmentation and specialty support; they now have the authority to lay out their requirements, directly hire multidisciplinary medical professionals, and thus build a medical capability that provides more precise care for service members, their families, and Department of Defense (DOD) civilians.

Medical units in the 18th MEDCOM actually began transforming in October 2006, when the 121st General Hospital converted to an echelons-above-corps combat support hospital. Since then, other 18th MEDCOM transformational changes have included the 52d Medical Evacuation Battalion's inactivation and the 168th Area Support Medical Battalion's conversion to a multifunctional medical battalion in October 2007. In October 2008, the 18th MEDCOM Headquarters (Korea) transformed to the 65th Medical Brigade (Korea).

USAMMC-Korea Class VIII Distribution

Multiple Sources of Supply:

Prime Vendor (Pharmaceutical)

Prime Vendor (MedSurg)

Local Purchase

Electronic Catalogue (CAT)

Web-Based Vendors

Manufacturers

Defense Logistics Agency Depots



"VOLUNTAS QUOD RESPONDEO"

The restructuring of the operational medical force has included the inactivation of functional medical battalions (including medical logistics battalions) in favor of multifunctional medical command and control headquarters at the battalion, brigade, and theater levels. Theater-level Army medical logistics organizations, which habitually support all services and designated coalition partners, will be linked by the Defense Logistics Agency (DLA) directly to commercial sources of supply at the national level.

The DLA strategic acquisition and distribution framework, which enables Army medical logistics organizations to reach directly to commercial sources (rather than to traditional wholesale-level inventories), was formalized through the implementation of DOD Directive 5101.9, DOD Executive Agent for Medical Materiel. This directive designated the director of DLA as the executive agent for medical materiel for DOD. Under the executive agent, designated Army medical logistics organizations serve as theater lead agents for medical materiel, managing theater distribution of medical materiel and providing intensive management of medical commodities as part of an integrated theater healthcare system.

The medical transformation resulting from all of these changes will provide warfighting commanders

with a highly responsive, capable, and interoperable medical system that is fully integrated throughout the continuum of care. This system is designed to minimize morbidity and mortality within the U.S. Armed Forces while maintaining the smallest possible medical footprint.

The 16th Medical Logistics Battalion

Korea's final medical transformational change occurred on 30 October 2008 with the inactivation of the 16th Medical Logistics Battalion (the last medical logistics battalion in the Army force structure) and the establishment of USAMMC-K. Until then, the 16th Medical Logistics Battalion had provided U.S. Forces Korea (USFK) organizations and U.S. Department of State activities with medical logistics support under a single integrated medical logistics management memorandum of agreement signed by all of the services.

The battalion provided medical logistics support under the armistice and during hostilities, including medical materiel management, storage and distribution coordination, optical fabrication, medical maintenance (organizational level through depot level), blood (both frozen and liquid) storage and distribution, and command and control of assigned and attached units. The battalion managed \$4.4 million of inventory, stocked

approximately 2,300 different line items, processed between 6,000 and 8,000 materiel release orders each month, fabricated over 1,500 single-vision and multivision lenses on a monthly basis, performed over 500 scheduled and unscheduled medical equipment services per month, and maintained a zero-balance rate between 2 and 4 percent.

The 16th Medical Logistics Battalion was a table of organization and equipment unit with an authorized strength of 195 Soldiers augmented by 33 civilian personnel and 22 Korean augmentees to the U.S. Army (KATUSAs). During wartime, the unit's strength was authorized to expand to 312 U.S. military personnel, supplemented with approximately 262 Korean Service Corps personnel. The battalion conducted medical materiel operations using the DLA Defense Working Capital Fund (DWCF). DLA, as the DOD Executive Agent for Medical Materiel, nominated the battalion to be the U.S. Pacific Command (PACOM)-Korea theater lead agent for medical materiel. The battalion also provided support to forces in Japan as well as naval vessels afloat.

U.S. Army Medical Materiel Center-Korea

One of the most challenging issues for Korea's medical community was preparing for the inactivation of the 16th Medical Logistics Battalion. It was projected that Korea's transformed medical logistics capabilities and capacities in fiscal year 2009 would not be able to meet USFK's requirements during peacetime, nor would they be able to support medical logistics missions outside the peninsula. If nothing was done to prevent this, each service would

USAMMC-K Mission

U.S. Army Medical Materiel Center (Korea) (USAMMC-K), is the theater lead agent for medical materiel (TLAMM), as nominated by the Commander, Defense Logistics Agency. It is responsible for the operation and management of the single theater inventory and distribution system for medical logistics for U.S. Forces Korea (USFK). On order, the USAMMC-K will provide medical supply, optical fabrication, and medical maintenance to USFK and U.S. Forces Japan forces deployed during a contingency. USAMMC-K will provide centralized class VIII (medical materiel) management, storage and assembly services, distribution coordination, optical fabrication and repair, and biomedical equipment maintenance services, as well as theater medical logistics planning consistent with service capabilities.



Medical supplies are sling-loaded by Soldiers of the 16th Medical Battalion. Its successor, the U.S. Army Medical Materiel Center-Korea, can expand its capacities during hostilities to assemble configured loads and push packages for delivery to forward units.

be required to establish strategic medical logistics support capabilities to sustain service-specific operational forces once the single integrated medical logistics manager (the 16th Medical Logistics Battalion) was inactivated.

So the Army determined that a table of distribution and allowances (TDA) organization was needed to project theater medical logistics in support of the Korean theater of operations, just as the U.S. Army Medical Materiel Center-Europe in Germany supports the U.S. European Command and the U.S. Army Medical Materiel Center-Southwest Asia in Qatar supports the U.S. Central Command. This new TDA organization is USAMMC-K (Provisional).

USAMMC-K continues to use the DWCF, and it has maintained the capability for joint augmentation and rapid expansion. The center operates as the theater lead agent for medical materiel and as the theater distribution center for medical logistics in support of joint forces and the Department of State during peacetime or upon transition to hostilities for USFK and PACOM. USAMMC-K manages the theater distribution of medical materiel in close coordination with the 19th Expeditionary Sustainment Command (ESC) and the Joint Forces Sustainment Coordination Center and with the 6th Medical Logistics Management Center upon transition to hostilities. USAMMC-K also provides

intensive management of medical commodities as part of an integrated theater healthcare system.

USAMMC-K is staffed with U.S. and Korean civilian employees, Korean Service Corps personnel, and borrowed military manpower from the 65th Medical Brigade, the 19th ESC, the 168th Multifunctional Medical Battalion, and the 563d Medical Logistics Company (which was activated in October 2008). USAMMC-K is colocated with the 563d Medical Logistics Company at Camp Carroll in Daegu, South Korea, providing strategic medical logistics support to operational forces located in the Korean theater.

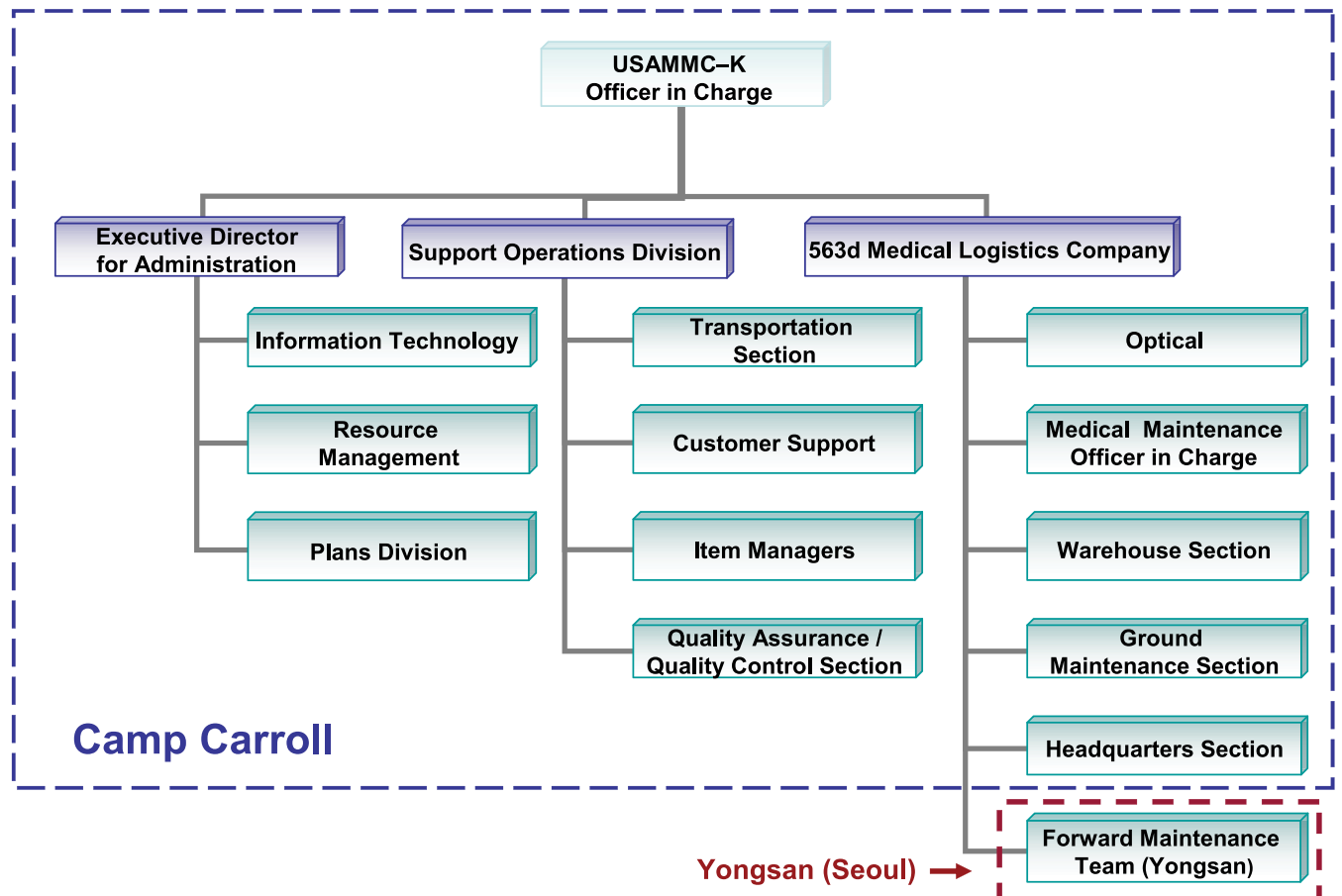
USAMMC-K is designed to rapidly expand medical logistics support capabilities during a transition to hostilities in order to meet force structure requirements. Rapid expansion will be accomplished through augmentation by operational medical logistics units and personnel and Korean Service Corps personnel; the center may also transition to contract or civilian staffing as appropriate for the mission. Expansion capacities include assembling configured loads and push packages with subsequent throughput; providing

optical fabrication and medical materiel in support of reception, staging, and onward movement operations; and performing medical maintenance and tracking of patient movement items. USAMMC-K may gain operational control, administrative control, or technical control of medical logistics companies from Army, Marine Corps, Navy, or Air Force medical logistics elements in support of its responsibilities as theater lead agent.

Impact of USAMMC-K

Future joint forces will likely operate in complex and uncertain security environments that are characterized by both conventional and asymmetric threats. International organizations and sponsored terrorist organizations will exist within these volatile, uncertain, and complex environments all over the world. U.S. Forces and coalition partners will require immediate support, including medical support, to conduct offensive, defensive, or stability operations. Medical personnel must be able to rely on medical logistics organizations to provide a timely response to their support requirements.

USAMMC-K Fiscal Year 2009 Structure



Without USAMMC-K on the Korean peninsula, operational units would be required to coordinate, plan, and procure their medical logistics strategic support from numerous manufacturers, maintenance facilities, and optical laboratories throughout the PACOM area of responsibility and the continental United States sustaining base. Without USAMMC-K, the response time for medical logistics support during a transition to hostilities scenario would be significant; class VIII (medical materiel) strategic lift requirements would be greater; optical fabrication wait time would increase significantly; and repair of medical equipment would require longer customer wait times.

These implications would be the same during peacetime, with the additional implication of increased organizational storage requirements for medical materiel due to longer customer wait times. Operational forces would have to invest more resources in the operations and maintenance funding associated with the increased requirements for medical materiel inventory; they would also have to increase their investment in supply facilities in order to meet the additional storage requirements.

Establishing the provisional Army MEDDAC, Army DENTAC, Army DVC, and USAMMC-K were truly the first steps in creating “normalcy” for the medical community in Korea. USAMMC-K fully supports the critical transformational efforts in Korea by creating a medical logistics organization that can provide the warfighting commander with a highly responsive, capable, and jointly interoperable medical system that is fully integrated throughout the continuum of care. This organization minimizes morbidity and mortality, and it does

USAMMC-K Capabilities

- Provides theater medical logistics planning and coordination with the combatant command staff.
- Provides theater medical materiel management and quality assurance.
- Provides receipt, storage, packing, and crating of medical materiel and equipment.
- Provides asset and in-transit visibility of medical materiel.
- Coordinates transportation of medical materiel, medical equipment, and optical products.
- Provides single- and multi-vision fabrication to supported operational forces.
- Provides strategic-level medical maintenance and repair.
- Provides liaison with senior operational forces logistics and medical organizations.



A Soldier fabricates eyeglasses. The capabilities of the U.S. Army Medical Materiel Center-Korea reduce optical fabrication wait times in Korea.

so with the smallest possible medical footprint in South Korea. This new organization is also fully capable of supporting the nearly 14,000 military family members and the DOD civilian employees, contractors, retirees, and service organizations throughout the Korea area of responsibility. And it executes this mission efficiently and effectively as part of the overall Army medical enterprise.

ALOG

COLONEL JAMES G. “GREG” JOLISSAINT IS THE BASE CLOSURE AND REALIGNMENT TRANSITION TEAM LEADER FOR WALTER REED ARMY MEDICAL CENTER IN WASHINGTON, D.C. HE WAS THE COMMANDER OF THE 18TH MEDICAL COMMAND AND COMMAND SURGEON FOR U.S. FORCES KOREA AND THE EIGHTH U.S. ARMY FROM JUNE 2006 TO JUNE 2008. HE HOLDS A B.S. DEGREE FROM LOUISIANA STATE UNIVERSITY, AN M.D. DEGREE FROM THE LOUISIANA STATE UNIVERSITY SCHOOL OF MEDICINE AND A MASTER’S DEGREE FROM THE NATIONAL DEFENSE UNIVERSITY. HE IS A GRADUATE OF THE ARMY COMMAND AND GENERAL STAFF COLLEGE AND THE INDUSTRIAL COLLEGE OF THE ARMED FORCES.

LIEUTENANT COLONEL THOMAS C. SLADE IS THE DIRECTOR OF THE U.S. ARMY MEDICAL MATERIEL CENTER (KOREA). HE PREVIOUSLY SERVED AS THE COMMANDER OF THE 16TH MEDICAL LOGISTICS BATTALION. HE HOLDS A B.S. DEGREE FROM EASTERN MICHIGAN UNIVERSITY AND AN M.S. DEGREE FROM WORCESTER POLYTECHNIC INSTITUTE. HE WAS COMMISSIONED IN THE MEDICAL SERVICE CORPS THROUGH THE OFFICER CANDIDATE SCHOOL AND IS A GRADUATE OF THE ARMY COMMAND AND GENERAL STAFF COLLEGE.

MAJOR DAVID L. SLONIKER IS THE S-4 OF THE 65TH MEDICAL BRIGADE. HE HOLDS A B.A. DEGREE FROM THE UNIVERSITY OF WASHINGTON AND AN M.B.A. DEGREE FROM WEBSTER UNIVERSITY. HE IS A GRADUATE OF THE ARMY COMMAND AND GENERAL STAFF COLLEGE.

Logistics Strategies for Planning the Presidential Inauguration

BY MAJOR CHRISTOPHER L. PAONE AND MAJOR WILLIAM KOSSICK, USAF

Supporting the inauguration of the President provided a unique exercise in logistics planning and execution for personnel drawn from all the services.

In August 2008, we were temporarily assigned to the Armed Forces Inaugural Committee (AFIC) in support of the 56th Presidential inauguration on 20 January 2009. The AFIC is a joint service organization charged with coordinating all military ceremonial support during the inaugural period, which this year lasted from 14 to 24 January. As we approached this unusual assignment, we were a little cautious, but we were excited nonetheless. However, we did not know what we were getting ourselves into.

The U.S. military has participated in inauguration ceremonies since George Washington was sworn into office as the first President on 30 April 1789. Soldiers of the Army and local militia units and Revolutionary War veterans escorted Washington to the first inauguration ceremony at Federal Hall in New York City. Two hundred and twenty years later, the military's participation continues to honor the newly elected commander-in-chief, thereby recognizing civilian control of the Armed Forces and celebrating democracy.

Since the inauguration of Dwight D. Eisenhower in 1953, this military participation has been formalized under a committee—the AFIC. Military ceremonial participation traditionally includes musical units, marching bands, color guards, firing details, salute batteries, and honor cordons. Soldiers, Marines, Sailors, Airmen, and Coast Guardsmen assigned to the committee also provide valuable assistance to two other organizations involved in organizing

and conducting the inauguration: the Presidential Inaugural Committee (PIC) and the Joint Congressional Committee on Inauguration Ceremonies (JCCIC). Following the presidential election, the President-elect appoints the PIC to plan and execute the official inaugural celebratory events. Thus, the PIC-planned events, which AFIC supports with military ceremonial personnel, are not defined until late November. The JCCIC plans and executes events on Capitol Hill, including the actual inaugural oath ceremony on the west front of the Capitol.

The Secretary of Defense authorized nearly 750 service members to be assigned on the day of the inauguration to coordinate Department of Defense (DOD) support in and around the District of Columbia. More than 5,712 service members participated in inauguration arrangements, both in view of the public and behind the scenes, in the days leading up to 20 January.

Forming AFIC

Planning for this year's AFIC began in January 2007 and can be grouped into six major phases: I

President-elect Barack Obama greets Major Paone, logistics coordinator for the Ceremonies Directorate, Armed Forces Inaugural Committee, on 8 January 2009. The 56th Presidential inauguration took place on 20 January. (Photo by Petty Officer 1st Class Kyle Niemi, USCG)



(assessment), II (pre-planning), III (planning, integration, and team building), IV (PIC established), V (execution), and VI (post-Presidential inaugural closeout).

Long before the 2006 midterm elections, phases I and II were well underway and involved assembling a planning committee to help shape the AFIC team. The team was lightly manned and largely supported by members of the Army Military District of Washington, headquartered at Fort Lesley J. McNair in southwest Washington. The most important task was to review the 2005 AFIC's Joint Manning Document to identify all positions required for activities supporting the 2009 inauguration.

The AFIC was originally staged at Fort McNair and then relocated to the downtown area, where it would be closer to all of the action. Accomplishing the move downtown required locating and securing building space, obtaining building agreements and land-use permits, acquiring office furniture, requesting parking spaces, and negotiating access points.

Planning, Integration, and Team Building

Fast forward to phase III, which was when we arrived. Phase III required detailed planning at the AFIC level, equivalent to operational-level planning. Key tasks included establishing the Ceremonies Directorate and other key AFIC staff positions, reviewing and editing plans, submitting land-use permits, coordinating with the JCCIC, and publishing DOD inauguration guidelines.

In phase III, the logistics team coordinated and built the concept of support for the Ceremonies Directorate. A 300-person joint service team spread out among five inaugural support divisions within the Ceremonies Directorate (which was part of AFIC's primary staff): Presidential Swearing-in Ceremony, Inaugural Parade, Street Cordon, Military Assistant Escorts, and Other Inaugural Events (or Special Events). Each of those divisions was chaired by an O-5 officer. Leading up to the inauguration, the Ceremonies Directorate logistics coordinator and the Logistics Directorate were responsible for planning, analyzing, and executing multifunctional logistics, including transportation, food service, and acquisition, receipt, issue, and recovery of Government and commercial equipment and supplies.

The planning of any Presidential inauguration is a difficult task. As logisticians, the primary justification used to prioritize and allocate limited resources is based on what is required to accomplish the mission objectives. Since AFIC provides ceremonial support for the PIC and the PIC would not be organized until after the election, it was not possible to establish firm requirements for planning early in the process. The starting point for planning, therefore, was to use the previous inauguration as a baseline of potential requirements.

The AFIC staff researched the 2005 inauguration after-action reports, operation plan, and continuity books to garner lessons learned, previous planning factors and considerations, and concepts of support to begin developing the 2009 support plan. This work all began before Senator Barack Obama was elected president in November 2008.

The 56th Presidential inauguration had the largest attendance of any inauguration in U.S. history. Unprecedented crowds, estimated to include as many as 1.8-million people, forced significant changes in planning and execution. The parade marchers' assembly area was moved from the Mall to the Ellipse, requiring significant planning changes and interagency coordination. Unprecedented security concerns significantly increased credentialing requirements—including, for the first time, a requirement to credential all 13,000 parade participants. AFIC successfully submitted a total of 19,105 U.S. Secret Service and U.S. Capitol Police credentials, while supporting and aiding the PIC efforts, with a 99.99-percent success rate. The post-September 11th security environment, the traffic congestion typical of Washington, D.C., and the potential for cold, snowy winter weather all brought to mind Napoleon's invasion of Russia in 1812 more than once. The AFIC Logistics Directorate was charged with providing the 700 AFIC staff and 1,600 task-assigned street cordon personnel with medical, transportation, food service, supply, and engineering support using a fleet of 157 vehicles and 155 personnel, most of whom were vehicle operators.

Another unique challenge to AFIC resulted from its status as a temporary organization formed during an election year. As a result, AFIC had no organic assets or capabilities, so everything it needed was procured, borrowed, coordinated, or contracted for in an environment where all expenditures were intensely scrutinized.

In order to narrow our focus and build a realistic plan, we asked ourselves such questions as "What will it look like when we get there?" "What will success be like, feel like?" and "How will others know?" Taking the time to answer each of those questions enabled us to develop key goals everyone would understand and could see fulfilled. They helped us quickly prioritize our work and have an immediate impact on the planning effort. Each question addressed factors of time, information, and process management: defining requirements; devising concepts; planning and coordinating support; executing the plan; and assessing its effectiveness.

Defining Requirements

Defining requirements was the most crucial step in securing resources to meet objectives for mission accomplishment. An accurate definition of operational

requirements ensured that sufficient assets were resourced and allocated or were identified as lacking. For inaugural logistics planning, requirements were defined by numbers of personnel requiring meal support, types of meals provided, transportation vehicle and movement requests, and types and quantities of assets (such as signs, posts, furniture, cones, sandbags, cots, sleeping bags, and beverage containers) needed to support the operational events envisioned by the Ceremonies Directorate. Central to our analysis, we needed to anticipate and plan for changes in requirements and tackle emerging needs to avoid unintended consequences. Establishing a process to capture, track, and communicate changes, coupled with the ability to account for additions or deletions, was important to ensuring the synchronization of all military, civilian, and interagency organizations.

For logisticians, it was frustrating to delay planning support while the Ceremonies Directorate defined operational needs. We all relied on understanding and communicating the expectations of a successful week of inauguration activities. Through careful coaching and prodding, we were able to help ceremonial planners consider their logistics needs and capabilities.

Devising Concepts

When requirements were identified, additional details such as timing, location, restraints, and constraints were evaluated to develop possible courses of action to accomplish mission objectives.

Some factors we considered in devising logistics support concepts were the capabilities present in the National Capital Region. The region is home to more than 10 military installations, so we knew this was where the bulk of the capabilities would come from. Evaluating the abilities of each installation to provide food service, transportation support, staging infrastructure, and security was important to ensuring that our logistics concepts were sound. For example, Bolling Air Force Base, D.C.,

had closed its dining facility since the last inauguration in 2005. That affected our concept of support from Bolling. To complicate this issue, AFIC was not the only organization approaching the installations for support; the installations were receiving requests from contingency forces, potential parade participants, and others with requirements not related to the inauguration. We had to compete for installations' capabilities and clearly define the priority of our mission in relation to others.

Another aspect we had to evaluate in developing our logistics concepts to support the ceremonial events was the support we would leverage from other Government agencies, such as the General Service Administration (GSA). By meshing together civilian Government and military installation capabilities, we were able to devise a support concept for transportation using a fleet of GSA vehicles, staging areas on military bases where hot meals would be served and logistics packages would be issued, contracted temporary facilities for command and control, and finally, Government-owned facilities to provide messing and shelter to street-cordon personnel.

This concept evolved as the mission evolved. Although many details seemed to be fluid, we understood that only one factor remained constant across all agencies—time. All support revolved around the timing of events and therefore was backward-planned in relation to those events. A synchronization matrix of required agencies and support had to be planned and plotted so it could eventually be fed into a master events list for executing ceremonial support.

Planning and Coordinating Support

Narrowly defining our requirements and coordinating to ensure that we delivered the right capability at the right time and in the right location was a difficult process because there were many unknowns. Much of the initial planning was compartmentalized with little awareness of other events or support requirements.

Through multiple map exercises, where different agencies responsible for certain aspects of the inauguration ceremonial support briefed their plans, the blinders came off and coordination increased.

It is often said in the Air Force, "Flexibility is the key to airpower," and the same is true

Members of the street cordon stand at the ready as the official motorcade moves from the Capitol along Pennsylvania Avenue.



Prepackaged meals are delivered to the Armed Forces Inaugural Committee headquarters on 31 December 2008. (Photo by TSgt Alan Port, USAF)

with logistics. As requirements and plans change, it is critical to have a good mechanism in place to manage changes and ensure that they are communicated quickly and to all parties. Change management is crucial to logistics planning, so we used a general crosstalk format to prioritize and communicate the latest information.

Executing the Plan

On Inauguration Day 2009, 160 AFIC logisticians partnered with personnel at Andrews Air Force Base, Maryland; Fort Myer, Virginia; Anacostia Naval Station, D.C.; and the Pentagon to execute months of planning and preparation. This was accomplished by synergizing multiple levels of interagency, civil, and military support to stand up key staging hubs. We developed timelines, directed movements, and provided the oversight to spot-screen, feed, and move 3,000 personnel executing the swearing-in ceremony, inaugural parade, street cordons, military assistants' escort services, and special events.

Between getting to the parade route and actions on the parade route, over 200 transportation movements took place. In addition, 10,000 meals were served or provided, 900 signs were put up and taken down, 13 command post trailers were installed, cleared of equipment, and removed, and many more actions took place behind the scenes. At this point, months of planning came into contact with the fog and friction of Inauguration Day—a cold, blustery winter day. As the day unfolded, the key to success was the strong leadership at the operational and tactical levels in the field, paired with a strong understanding of the overall mission objectives and the desired end state.

So here we are, 220 years after the first inauguration. Our goal in this article is to present a joint perspective on our logistics planning model, supporting the full spectrum of joint military and civilian interagency operations. We faced some significant challenges, but most were out of our control as logisticians, such as traffic congestion, long lines, crowd control, and ticketing and viewing problems. Our logistics team brought together musical units,



marching bands, color guards, firing details, salute batteries, and honor cordons, taking center stage supporting the most complex presidential inauguration to date. Through our many logistics exercises, AFIC map exercises, and logistics crosstalk sessions, we rehearsed, analyzed, assessed, and estimated the effectiveness of our support plan. It briefed well and became a reality on Inauguration Day. **ALOG**

MAJOR CHRISTOPHER L. PAONE WAS THE LOGISTICS COORDINATOR FOR THE CEREMONIES DIRECTORATE, ARMED FORCES INAUGURAL COMMITTEE, ARMY MILITARY DISTRICT OF WASHINGTON, JOINT FORCES HEADQUARTERS, NATIONAL CAPITAL REGION, AND FORT LESLEY J. MCNAIR. HE HOLDS A B.S. DEGREE IN BUSINESS MANAGEMENT FROM PROVIDENCE COLLEGE AND AN M.B.A. DEGREE FROM THE UNIVERSITY OF MARYLAND AND IS A GRADUATE OF THE COMBINED LOGISTICS OFFICERS ADVANCE COURSE AND THE THEATER LOGISTICS STUDIES PROGRAM. HE IS CURRENTLY ASSIGNED TO THE 82D AIRBORNE DIVISION AT FORT BRAGG, NORTH CAROLINA.

MAJOR WILLIAM KOSSICK, USAF, IS THE COMMANDER OF THE 410TH SUPPLY CHAIN MANAGEMENT SQUADRON (SUPPORT EQUIPMENT), 638TH SUPPLY CHAIN MANAGEMENT GROUP, 448TH SUPPLY CHAIN MANAGEMENT WING, AT ROBINS AIR FORCE BASE, GEORGIA. HE WAS THE CHIEF OF SUPPLY AND SERVICES FOR THE LOGISTICS DIRECTORATE, ARMED FORCES INAUGURAL COMMITTEE. HE HOLDS A B.S. DEGREE IN COMPUTER SCIENCE FROM THE UNITED STATES AIR FORCE ACADEMY AND A MASTER'S DEGREE IN AVIATION MANAGEMENT FROM EMBRY-RIDDLE AERONAUTICAL UNIVERSITY. HE IS A GRADUATE OF THE AIRCRAFT MAINTENANCE AND MUNITIONS OFFICER COURSE, THE SQUADRON OFFICER SCHOOL, AND THE AIR COMMAND AND STAFF COLLEGE.

UNIFIED VIEW: Improving Distribution and Deployment

BY JOHN GRAY

The U.S. Transportation Command, the U.S. Joint Forces Command, and the Defense Logistics Agency collaborate to streamline the development of ways to fill capability gaps.

The Department of Defense (DOD) constantly identifies capabilities needed to accomplish its worldwide missions and gaps in its existing capabilities. The challenge of selecting and implementing near-term solutions to close these gaps can be daunting. Often, solutions cannot be implemented in a timely manner because of political and fiscal restrictions; it can take 5 years to fully implement some solutions across DOD. However, in many cases, needed capability gaps cannot wait 5 years for solutions.

As the DOD Distribution Process Owner, the U.S. Transportation Command (TRANSCOM) is responsible for the global distribution of forces, equipment, and supplies to support combat, peacekeeping, and humanitarian operations. To better meet the needs of its customers, TRANSCOM, working with the U.S. Joint Forces Command (JFCOM) and the Defense Logistics Agency (DLA), developed a process that streamlines the delivery of solutions to gaps in deployment and distribution capabilities. This process is a series of annual experiments called UNIFIED VIEW (UV), and it has produced several key improvements in the deployment and distribution processes in the last 4 years.

The UNIFIED VIEW Process

In 2005, TRANSCOM and JFCOM designed UV to establish a continuous cycle of improvements for the warfighter and create a systematic process of continued development of solutions to fill capabilities gaps. During UV 2006 (UV06), DLA became the third sponsor of the UV experiment series. UV focuses on integrating joint deployment, global distribution, and sustainment processes. It leverages the Joint Exercise Program, current operations, lessons learned, and previous experimentation results. UV participants include the combatant commands, the armed services, and DOD agencies.

UV uses the Joint Capabilities Integration Development System (JCIDS) Capabilities Based Assessment (CBA) and applies the JCIDS analysis to the experimentation process. The first part of each UV CBA is to conduct a functional area analysis (FAA), which is used to look at areas where problems may exist. Next is a functional needs analysis (FNA), through which needed capabilities or gaps in existing capabilities are identified. A functional solutions analysis (FSA) then is used to research and identify possible solutions to the needs or gaps and ultimately produces a set of recommended solutions.

Integrating requirements provides opportunities to reallocate resources for different requirements as they arise. This increases flexibility to handle crises by involving transportation planners earlier in the requirements development process and reduces the need to completely rework all requirements.

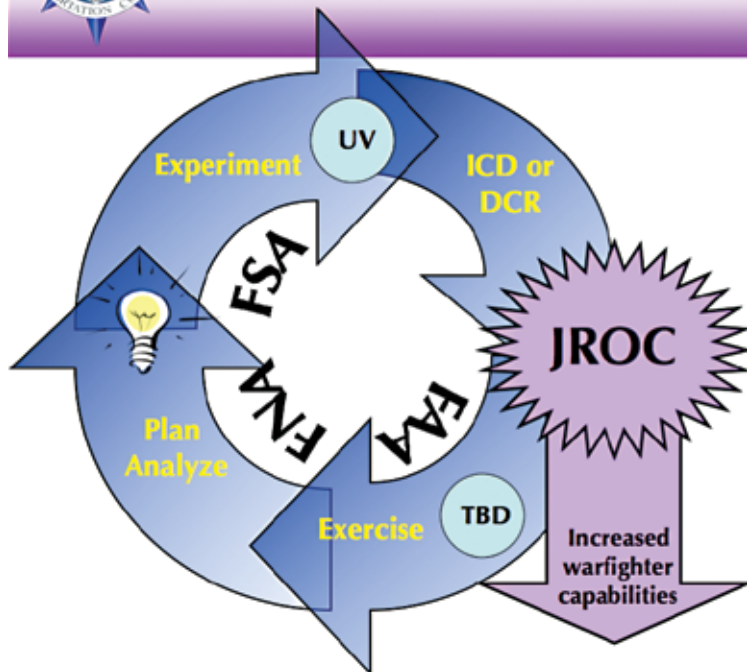
These solutions are usually in the form of changes to doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) throughout DOD. The goal is to list deficiencies, research capabilities, determine solutions through experimentation, and develop a final product within 12 to 18 months. The UV series, using JCIDS, becomes a means for rapid process and materiel improvements.

Force Tracking Number and Focus Warfighter

UV 2005 (UV05) was the first experiment in the UV series and focused on integrating deployment and distribution processes. On 16 October 2006, the Joint



UNIFIED VIEW Concept



Objective: Continuous integration of deployment and distribution process improvements

Exercise tie: Leverages selected Chairman of the Joint Chiefs of Staff exercises and current operations

UV aligns products with the JCIDS process and will deliver a JCIDS product



- Cosponsored by TRANSCOM, JFCOM, and DLA
- Leverage exercises and current operations
- Aligned with JCIDS



Legend

DCR = DOTMLPF change recommendation
DLA = Defense Logistics Agency
FAA = Functional area analysis
FNA = Functional needs analysis
FSA = Functional solutions analysis
ICD = Interim capability document

JCIDS = Joint Capabilities Integration Development System
JFCOM = U.S. Joint Forces Command
JROC = Joint Requirements Oversight Council
TBD = To be determined
TRANSCOM = U.S. Transportation Command
UV = UNIFIED VIEW

Requirements Oversight Council (JROC) released JROC Memorandum 218-06, which directed implementation of the two solutions developed by UV05: the force tracking number (FTN) and the focus warfighter (FW) process.

Use of the FTN improves the sourcing and tracking of request for forces and rotational force requirements throughout the deployment process and enhances force-closure reporting. FTN is currently implemented through the published Joint Staff force tracking number business rules message and will be incorporated completely in version 4.2 of the Joint Operations Planning and Execution System (JOPES).

FW integrates all combatant command, service, and DOD agency requirements into a single, integrated, coordinated strategic and tactical transportation solution. Integrating requirements provides opportunities to reallocate resources for different

requirements as they arise. This increases flexibility to handle crises by involving transportation planners earlier in the requirements development process and reduces the need to completely rework all requirements. An example would be shipping certain low-priority commodities by surface transportation rather than by air to save time and money. Use of FW results in more reliable, predictable service and increased visibility of all movements.

Integrating Deployment and Distribution

UV06 built on the previous year's experiment. It focused on integrating the deployment and distribution processes, specifically through global force allocation management (GFAM) and sustainment forecasting and planning (SFP). JFCOM, as the DOD Joint Force Provider, required a method to manage and track validated combatant commander

... combatant commanders require an improved capability to identify, plan, and manage the deployment, force rotation, redeployment, and sustainment requirements of multinational, interagency, international organization, and nongovernmental organization coalitions.

force allocation requests, sourcing recommendations, and Secretary of Defense force allocation decisions that could adequately support its mission. GFAM helped to provide a solution to this requirement.

The GFAM and SFP efforts resulted in development of two JCIDS documents: a capabilities production document (CPD) for GFAM and a DOTMLPF change recommendation (DCR) for SFP. The GFAM CPD is being reworked as a Joint Capabilities Requirements Manager (JCRM) CPD. The SFP DCR was transitioned to the Adaptive Planning and Execution Logistics Working Group for consideration in developing their future processes.

Unit and Multinational Coalition Movements

UV 2007 (UV07) was the third in the UV series. The UV07 working group determined gaps and possible solutions for two problem areas.

First, deployment systems do not support joint information requirements needed for maintaining command and control and for reporting transportation tracking and closure (unit move tracking).

Second, combatant commanders require an improved capability to identify, plan, and manage the deployment, force rotation, redeployment, and sustainment requirements of multinational, interagency, international organization, and nongovernmental organization coalitions. This capability must be executed in an end-to-end manner during time-phased force and deployment data development, validation, and movement execution. (Movements include all self-deployers, U.S. military lift, non-U.S. lift, and commercial contract and civilian carriers by air, land, and sea).

The second problem area was narrowed down to the issue of military forces only, and two DCRs were developed for these problem areas:

- TRANSCOM's transportation tracking number (TTN) was proposed as a potential solution to the issue of unit move tracking.
- Nine DOTMLPF recommendations were proposed to address the process improvement of multinational coalition deployment planning and movement execution.

The DCRs included establishing support for coalition applications within the Defense Information

Systems Agency, updating doctrine, funding the coalition deployment planning tool, and updating professional military education and training. The TTN DCR has been briefed to and approved by the Focused Logistics Functional Capabilities Board (FCB) Working Group, the Command and Control FCB Working Group, and the Joint Capabilities Board. A JROC memorandum was produced and staffed in early January 2009 and sent to the Vice Chairman of the Joint Chiefs of Staff for signature. The multinational coalition DCR was scheduled to be briefed to the Net-Centric Operations and Focused Logistics FCB working groups in late February and early March, respectively.

UV 2008 (UV08) FSAs are complete. UV08 focus areas included requirements and movement control, visibility, and deployment and redeployment closure. A package of recommended JOPES changes was developed and will be coordinated through the JOPES action group in the second quarter of fiscal year 2009. Many joint publications were examined as well, and several recommended changes that apply to Joint Publications 3–08, Interagency, Intergovernmental Organization, and Nongovernmental Organization Coordination During Joint Operations, and 3–35, Deployment and Redeployment Operations, will be submitted to the Joint Staff for staffing throughout DOD in the third quarter of fiscal year 2009.

UV 2009 (UV09) is underway; the FAA was held from 27 to 29 January and the FNA from 10 to 12 March. I strongly encourage any interested organizations with logistics, deployment, or distribution challenges to participate in UNIFIED VIEW. Please contact Colonel Blake Mahan at (618) 229–3041 or blake.mahan@ustranscom.mil or John Gray at (618) 229–1041 or john.gray.ctr@ustranscom.mil for more information.

ALOG

JOHN GRAY IS A SUBJECT-MATTER EXPERT IN THE WARGAMES AND EXPERIMENTATION BRANCH OF THE STRATEGY, POLICY, PROGRAMS, AND LOGISTICS DIRECTORATE AT THE U.S. TRANSPORTATION COMMAND AT SCOTT AIR FORCE BASE, ILLINOIS, WHERE HE PARTICIPATES IN THE UNIFIED VIEW (UV) SERIES OF EXPERIMENTS. HE HOLDS A B.S. DEGREE IN COMPUTER INFORMATION SYSTEMS FROM MCKENDREE COLLEGE AND AN M.A. DEGREE IN COMPUTER RESOURCE AND INFORMATION MANAGEMENT FROM WEBSTER UNIVERSITY.

STEPHEN DANIELS AND RICHARD HAIR OF SRA INTERNATIONAL AND COLONEL BLAKE MAHAN, THE CHIEF OF THE WARGAMES AND EXPERIMENTATION BRANCH, MADE SIGNIFICANT CONTRIBUTIONS TO UV EFFORTS AND THIS ARTICLE.

Where's My Stuff?

BY ROY E. GULLEDGE

The Asset Visibility system provides Department of Defense logisticians with timely and accurate information on the location and status of personnel and equipment.

For many years, the Department of Defense (DOD) has sought to improve the visibility of assets in the global distribution logistics pipeline and provide an integrated view of the location, movement, status, and identity of units, personnel, equipment, and supplies. The ability to track these assets answers the question on everyone's mind: Where's my stuff?

Asset Visibility

The web-based Asset Visibility (AV) system, managed by the Defense Logistics Information Service (DLIS) in Battle Creek, Michigan, was the first capability delivered by the Defense Logistics Agency's (DLA's) Integrated Data Environment (IDE). IDE provides a service-oriented architecture for DLA transformation programs and fulfills many logistics requirements, such as visibility of data, secure access to data, and improved data quality in terms of validity, timeliness, and accuracy.

AV works with other DOD initiatives, including the Defense Transportation Coordination Initiative (DTCI) and IDE/Global Transportation Network Convergence (IGC). DTCI is a joint project of the Under Secretary of Defense for Acquisition, Technology, and Logistics; the U.S. Transportation Command (TRANSCOM); DLA; and the individual services. Its purpose is to refine the way DOD manages domestic freight shipments. The initiative will transition freight management to a third-party coordinator and help DOD adopt commercial best practices.

The IGC program is a joint initiative between TRANSCOM and DLA that will provide DOD with integrated end-to-end supply chain, deployment, and distribution data and information. The goal of IGC is to support the joint force commander's ability to make decisions based on actionable logistics information.

AV provides pipeline data on materiel resources. Armed with this type of information in a joint logistics environment, Soldiers get firsthand knowledge of the availability and status of critical materiel and its location in the logistics pipeline. This helps to determine if assets are available within the immediate vicinity, if they can be rerouted, or if wholesale stocks are the only means of resupply.

The AV system is a segment of data capture tools that embody the generic term "logistics visibility."

The ultimate goal of logistics visibility is to provide a description of processes, resources, and requirements. AV deals with visibility of resources (supplies and equipment) and with visibility of arrivals and departures of passengers aboard military transport. AV is a tool provided to joint warfighters at all levels—strategic, operational, and tactical—but designed to assist customers at the tactical level. Joint force commanders need visibility of resources to assess capabilities and integrate logistics requirements.

Categories of Visibility

The AV system divides visibility of materiel into three basic categories: in-storage, in-process, and in-transit. In-use assets are a subset of the in-storage category and include unit equipment and clothing and individual equipment.

In-storage assets include all classes of supply, except class X (materials for nonmilitary programs), that are available for issue at a wholesale supply point to meet user demands from all military services or at retail-level supply support activities that store assets to support the mission objectives at that location.

In-process assets have been acquired from a source of supply but not shipped. In-transit assets have been shipped and are moving from a point of origin to a final destination but have not been received by the requester.

In-use assets are already issued to an organization or unit. Some of these assets are not normally visible in AV because they are no longer on accountable supply records. Unit equipment, on the other hand, is visible in AV because class VII (major end items) and some class II (clothing and individual equipment) assets are managed with property books or within an equipment management system that correlates authorization allowances to available on-hand balances. These assets are on accountable records and are part of the data feeds provided to AV from all branches of the U.S. military.

AV Users

Anyone who works in a joint logistics environment needs to have visibility to match resources with requirements. Soldiers on the ground can experience

poor visibility of on-order or requisitioned materiel when working from remote locations or under austere conditions or while trying to keep stock at a certain level. Not knowing the status of critical parts or equipment results in duplicate requisitions being submitted to depots, which creates multiple shipments of the same asset and, ultimately, excess supplies that become labor intensive to report and redistribute. This creates unnecessary cargo movement, not to mention paperwork, and the high costs associated with it.

AV provides the latest status of requisitions that were submitted through the Defense Automatic Addressing System Center (DAASC). With a joint view, a logistician, planner, or maintenance coordinator can see how a requisition stacks up against all other requisitions in the system. Reports from AV can assist joint logisticians in making decisions about scheduling maintenance or seeking other sources of supply.

If operational requirements change, resources may need to be reallocated and shipments en route may need to be diverted to other locations. A search of inventory in AV may reveal that assets are available at nearby locations and could fill critical requirements. Anyone who is in the business of tracking materiel or who has a mission to ensure resources are in place for sustainment or operational requirements must have this visibility.

How to Use AV

As with any system, training makes an AV user more proficient. DLIS offers an official 8-hour course that provides hands-on training and a comprehensive walk-through of all the query functions. However, formal training is not necessary; the program is intuitive, and users can easily work through the steps. Online help is available if you need a description of the process, and the computer-based training includes a detailed,

step-by-step curriculum. Pocket reference guides are distributed during briefings, demonstrations, and training classes and are also provided upon request by the AV program management office (PMO).

To make use even easier, AV offers predefined queries that answer most questions about the location of materiel. The AV homepage outlines all predefined queries, and each AV category listed includes functional areas of the predefined queries. For example, if you are searching for ammunition available for issue, select a predefined query that falls under “in-storage” and “ammunition.” If you are searching for unit equipment that is authorized and on hand at designated units, select a predefined query under “in-storage” and “unit equipment.” To find status of requisitioned materiel, select a query under “in-process” and “requisition summary” (for the latest status only) or “requisition history” (for a complete history of transactions).

In-transit information is data from the Global Transportation Network, which gets its data from multiple sources, such as the Global Air Transportation Execution System, Cargo Movement Operations System, Global Decision Support System, Global Freight Management, and DAASC. AV also gets up-to-the-minute data feeds from the global radio frequency in-transit visibility server for all cargo with radio frequency identification (RFID) tags moving through transportation channels. AV displays nomenclature, quantity, document number, and precise locations as these tags are read from one interrogation point to another until the cargo reaches its final destination.

Inventory and in-transit data can be found on all classes of supply, including bulk fuel, spare parts, prepositioned stocks, and even blood supplies. In addition to materiel status queries, AV offers predefined queries for reference data. If a user has a DOD activity address code (DODAAC) and needs a mailing, freight, or billing address, AV has a predefined query that provides that



A Soldier uses the online Asset Visibility system, which helps Soldiers keep track of resources, supplies, materiel, and the arrivals and departures of passengers aboard military transports.

information. If a user wants a description for an item with a national stock number or the item's price, unit of issue, source of supply, or interchangeable and substitutable items, AV has a query to provide the data.

If no predefined query meets the user's individual need, a query simply can be modified or built. After defining the query, users can save it as a personal query for future use or even send it to another user. The AV application offers several options for query building. Users can turn data into charts or graphs and format and display the data in many ways.

AV Data

AV data come from authoritative sources from all military services and DLA. More than 40 files are uploaded every day. For example, in-transit data are received from the Global Transportation Network, TRANSCOM, and the RF in-transit visibility server. The Global Transportation Network integrates data from multiple systems, such as the Global Air Transportation Execution System, Cargo Movement Operations System, Global Freight Management, and Commercial Electronic Data Exchange. Data in AV are near-real time, with data exchange occurring as frequently as every 15 minutes for RFID tag records and DAASC requisition transactions.

The Logistics Information Warehouse sends new files for pre-positioned stocks, unit equipment, retail and wholesale supplies, and ammunition every day. AV accepts these files and, through the extraction and load process, loads the data that have changed since the last file was received. So, the data shown for the Army are near-real time and updated at least every 24 hours. Unless stock is moving in and out of a storage point at a high rate, the data are considered current. The Federal Logistics Information System (FLIS), which does not have frequent changes, is updated monthly. FLIS data are known as reference data in AV.

Asset Visibility Enhancements

The AV PMO is involved in updating the system to work better, faster, and more efficiently. Many of the enhancements approved by the Joint Functional Requirements Board have come directly from users' suggestions. In the near future, AV users can expect to see more bulk fuels data as DLA data feeds increase. Passive RFID tag tracking is now visible in AV, and the function will improve as requirements to track passive tags increase.

The Logistics Information Network integration will occur when the current Logistics Information Network application transitions into AV. Former Defense Emergency Supply Expert System users are already using AV to locate materiel and check on the status of requisitions. The AV PMO and the Intelligent Road/Rail

Information System (IRRIS) PMO have partnered to provide a mapping capability that takes the data from AV and shows locations (by DODAAC) on a map in IRRIS. The first spiral development is complete, and future enhancements will allow users to click on a location and display inventory availability data for that location.

Accessing Asset Visibility

Access to AV requires the use of a DOD common access card (CAC) or external certificate authority card. The user must be granted permission to use the system and have access to the Internet. AV is on both the Unclassified but Sensitive Internet Protocol Router Network and the Secure Internet Protocol Router Network. For simplicity, only the process for the unclassified site is discussed here.

When users access the AV homepage (<https://www.av.dla.mil/welcome>), they will be prompted for a DOD public key infrastructure certificate from their CACs. When the AV welcome page is displayed, users must select "Request an Account" from the top toolbar to be taken to the Global Combat Support System-Joint (GCSS-J) portal.

Users must register online for GCSS-J single sign-on portal access and an AV account. After verification of eligibility from the Joint Personnel Adjudication System and the Global Directory Service, access for military and Government civilians is usually granted in 48 to 72 hours. Access for Government contractors and foreign nationals working for the U.S. Government might take longer because sponsorship letters from their U.S. employers are required. Foreign nationals working for their own governments are not currently eligible, but with integration of WebLink International into AV, role-based access will be granted to view foreign military sales requisitions.

AV is designed for warfighters at all levels of command to use in a joint logistics environment, but it is not a replacement for service-owned logistics systems. However, if you are away from home station and need to check on the availability of stock, the status of your requisition, or how soon supplies will be delivered, AV can provide that capability. For more information, visit the AV website or send comments or questions to avpmo@dlamail.

ALOG

ROY E. GULLEDGE WORKS FOR AMYX, INC., AS THE ASSET VISIBILITY PROGRAM MANAGEMENT SUPPORT CONTRACT PROJECT MANAGER AT THE DEFENSE LOGISTICS AGENCY. HE IS A RETIRED AIR FORCE CHIEF MASTER SERGEANT WITH 26 YEARS IN THE LOGISTICS CAREER FIELD. HE HAS OVER 10 YEARS OF EXPERIENCE WITH JOINT LOGISTICS STUDIES AND APPLICATIONS, SUCH AS THE JOINT TOTAL ASSET VISIBILITY SYSTEM.

Top Flite: How One BSB Secured Logistics Convoys in Iraq

BY LIEUTENANT COLONEL MARK J. WEINERTH AND CAPTAIN TIMOTHY N. PAGE

While preparing for deployment to Operation Iraqi Freedom 06–08, the 26th Brigade Support Battalion used a “Top Flite” security platoon to provide convoy security.

You are the brigade support battalion (BSB) commander, and you know that you are going to have to use convoys to get supplies and materials to your brigade combat team (BCT). You know that the brigade does not have enough troops to secure your convoys, and you do not want to divert troops from other missions because you want the BSB to be an enabler for your BCT. You also know that a trained security platoon offers the brigade the extra capability needed to conduct explosive ordnance disposal (EOD) security, route security, and mounted and dismounted patrols. Supporting a BCT may require you to conduct three to four logistics convoys simultaneously. You also know that your modification table of organization and equipment does not contain a blueprint for a security platoon or any other method for securing your logistics convoys. So, how do you provide the security needed to complete your logistics mission?

Every BSB and most other support battalions establish their own methods and tactics, techniques, and procedures (TTP) for providing convoy security. Our unit, the 26th BSB, which was supporting the 2d BCT, 3d Infantry Division, had a security platoon concept that worked during Operation Iraqi Freedom (OIF) 04–06. So when presented with the same dilemma 10 months before deploying for OIF 06–08, we pulled out our “Top Flite” security platoon blueprint and made some modifications. We formed the platoon using some of the same Soldiers from OIF 04–06 and many new members. This article lays out a way to conduct logistics convoy security and train for success before your deployment.

Establishing the Top Flite Platoon

Unfortunately, we did not know our mission or location in Iraq until 15 days before our deployment. However, because of the structure and training we had put in place, we were able to adapt to a varied and demanding mission.

The first step was to ask for volunteers. Soldiers who wanted to participate and wanted to be on the road were the first ones chosen. The rest of the Soldiers in

this platoon of more than 40 members were “volunteered” by their respective companies. Fuelers, ammunition handlers, mechanics, welders, and even a few infantrymen were all welcomed. No doubt, the keys to success were the right lieutenant and some strong noncommissioned officers. We were able to include a few combat-tested infantrymen and a medical services platoon leader with infantry experience. This leadership team set the foundation for the platoon.

We organized this platoon into three squads with four vehicle crews per squad. Each squad served as the security element for one logistics convoy. The platoon leader, platoon sergeant, and most senior staff sergeant were each assigned to a different platoon, so any one of the three squads was capable of operating independently. Each squad also had a medic. The platoon was placed under the maintenance company, of all places. It was an odd pairing at first glance, but it proved to be a great fit based on the experience of the key leaders within the maintenance company.

As a tank platoon leader in the streets of Sadr City, Iraq, in 2005, the company commander had learned how to project security of an element and actions on contact. This experience helped him as he led a maintenance company and guided a security platoon through its trials and tribulations of becoming a legitimate brigade asset that, if employed properly, was worth its weight in gold. We decided to fill the platoon 10 months before the deployment, allowing ample time to train as a platoon, field equipment, and fully prepare for the mission. With 95 percent of the platoon members working well outside the bounds of their military occupational specialties, training was crucial and we took advantage of every training opportunity we had.

Training Before Deployment

We slowly started platoon training and focused on small-arms gunnery and mastering the weapon systems. Simultaneously, in between small-arms range training, we began using Bradley fighting vehicle and high-mobility multipurpose wheeled vehicle (HMMWV) simulators to focus on moving as a crew and platoon. We developed



The Top Flite platoon sergeant briefs his convoy team on the day's mission.

a training scenario involving the execution of a logistics convoy from Forward Operating Base (FOB) Rustimiyah to Victory Base Complex. The battalion established a tactical operations center to facilitate reporting, and we presented each logistics convoy with the following scenarios: improvised explosive device (IED) with casualties, IED without casualties, vehicle breakdown, escalation of force, and route closure.

Following the simulation, scenario, and small-arms gunnery training, we conducted situational exercise logistics convoy lane training for the Top Flite platoon and distribution platoons. We used the same scenarios as the close combat tactical trainer, but these were run in two iterations of each element with a dry fire and then blank fire. The first big training event came in the form of our battalion field training exercise. The distribution platoon conducted situational training exercise lanes and moved through mock urban environments. The Top Flite platoon conducted a convoy live-fire exercise that was very beneficial in determining where to focus training.

After conducting weeks of walk-through rehearsals of actions and reactions and rehearsing fire commands, we sent the team out to shoot Scout Gunnery Tables VII and VIII. Those 3 days and nights of training side-by-side with the 3d Squadron, 7th Cavalry Regiment, were invaluable in building crew confidence. The Soldiers learned many lessons, such as acquisition of targets, fire commands, and the importance of AN/PAS-13 thermal weapon site batteries. Next, we moved into our brigade field training exercises in which we pushed countless logistics convoys and conducted more situational training exercises.

Cadre from the National Training Center at Fort Irwin, California, came to Fort Stewart, Georgia, to put our

BCT through a home-station mission rehearsal exercise. During this exercise, we finally hit the “range walk” phase of our training. The Top Flite platoon was first put to the test during strenuous react-to-contact drills and casualty evacuation lanes. We also trained on air-to-ground integration and survival, evasion, resistance, and escape level-II. Finally, we got to the point that we could begin securing multiple logistics convoys to multiple destinations and got the chance to react to IEDs, small-arms fire, and interaction with host-nation forces.

The training was great, and we learned a lot from the observer-controllers and a lot about our Soldiers and how they worked as a platoon. The training was realistic and battle-focused. In the dark of night, the heat, a winding road, and the Georgia sand could be confused for any rural patch in Iraq. With this exercise, our stateside training was complete and we were ready to deploy.

Training in Kuwait

Kuwait and the Udari Range Complex had many training opportunities led by MPRI. [MPRI is a training, simulation, and Government services company that provides contract training to U.S. military forces.] Training was selected from a menu of choices weeks before our arrival. We chose those tasks in which we needed to be most proficient (react to contact) and those tasks that we needed to work on the most (close-quarters marksmanship). The days were long and hot. Tempers flared, and the Top Flite platoon got “recocked” a few times. But we stuck with the theme “learn and grow.”

The training was as realistic as it gets. We selected tactical mounted counter-IED training to increase IED awareness, the Train the Trainer Counter-IED Confidence course to validate the orders process and refine

Logistics Convoy Battle Rhythm			
Day Prior	1300	Fusion meeting	Layout mission requirements and lock in SP time and destinations.
	1900	Convoy brief	Brief mission routes, timeline, threats, significant acts, and rehearsals.
Day of Execution	SP – 2 hours	Covoy linkup	Assistant convoy commander conducts radio checks and PCCs and PCIs.
	SP – 1.5 hours	Go/no-go brief	Mission commander and convoy commander backbrief staff on the day's mission and receive updated opinions and intelligence.
	SP – 0.5 hours	Convoy update brief	Convoy commander briefs the logistics convoy to include opinions and intelligence updates.
	RP + 0.5 hours	Convoy debrief	Support operations S–2, and S–3 representatives identify issues and concerns.

Legend

PCC = Precombat check

RP = Return point

PCI = Precombat inspection

SP = Start point

standing operating procedures and TTP, and the entry control point live-fire exercise to hone our close-quarters skills. All the training that the MPRI staff provided was excellent, and we definitely made huge strides forward as we prepared for combat logistics operations. We also conducted HMMWV egress assistance training (HEAT) and AN/PRC–148 (V)(C) multiband inter/intra team radio (MBITR) and counter radio-controlled IED electronic warfare (CREW) training. The train-up was complete, and now nothing was left but to go out and execute.

Fielding Equipment

We would be remiss if we did not address how our BSB focused on crucial equipment fielding for this platoon. The platoon and company leaders spent the time between field exercises requesting and fielding equipment that BSBs never see and most support Soldiers never use during their careers. Some of our first moves included acquiring advanced combat optical gunsights, Electro-Optics Technologies sights, acquired tactical illuminating laser aimers, and the necessary crew-served weapons (particularly M240Bs). Escalation-of-force kits, which included stop signs, warning signs, and lights, also proved to be very valuable acquisitions. The chain of command all agreed that the more tools they had in their mental and physical toolbags, the easier it would be to get through any situation. Many operational needs statements were submitted. Everyone appreciated what we were doing, and we got what we needed to complete our mission and many other secondary missions.

We were the last of five “surge brigades,” and as such, we had no unit to replace and had to assume support operations within the first week of arriving. Initially, we improved the force protection posture of our vehicles. We mounted rhinos [heat decoys attached to the front of a vehicle to deceive infrared IED-aiming devices]; attached our additional gunner-protection kits, including adding HESCO wire tacked in an arch

over the gunner with camouflage netting attached; and mounted as many lights as we could find. Once our trucks were ready, we hit the road.

Beginning Operations in Iraq

We were the first unit in our BCT to start operations outside the wire. We built a logistics convoy briefing room that served as a place to plan, brief, and debrief every mission. We hung overhead imagery of every bridge, major intersection, and patrol base or FOB on the walls. The battle rhythm we built was simple. We held a fusion meeting at 1300 that laid out the transportation and cargo requirements for the next 48 hours. At 1900, we conducted a briefing to give every person in the logistics convoy (to include passengers) a threat assessment, mission, scheme of maneuver, coordinating instructions, and a white-board rehearsal for the next morning's logistics convoy. Two hours before the start point, we conducted precombat checks and inspections and communication checks. Ninety minutes before start point, the convoy commander and mission commander conducted the go/no-go brief with one of the field grade officers, the S–2, and the S–3 in order to receive an operations intelligence update and to brief on execution of the upcoming mission. We then conducted a convoy update brief for new significant actions 30 minutes before start point. It was our system, we made it work, we stuck to it, and it served us well.

One thing we did not account for during all of our planning and organizing of this platoon was Soldiers going on environmental morale leave and the normal attrition that comes with a 15-month deployment. We learned quickly that we needed to stand up an additional three vehicles and crews to serve as a company internal quick reaction force to fill in on missions and as a battalion reserve if the need ever arose.

A few folks were identified as competent enough to be truck commanders, and we selected volunteer

Security Platoon Blueprint

Personnel:

- 1 lieutenant (branch immaterial)
- 1 E-7 (combat arms background preferred)
- 4 E-6s (50-percent combat arms background)
- 8 E-5s (MOS immaterial)
- 32 E-4 and below (MOS immaterial)
- 4 68W (1 E-5)

Equipment:

- 14 MRAPs/ M1151s
- 7 50 cal
- 7 M240Bs
- 14 CREW devices
- 7 BFTs
- 14 EOF Kits

Other Assets to Assist in Security

Company QRF: 3 MRAP/M1151, crews, and associated equipment

Battalion C2 vehicles: 3 MRAPs/M1151s with additional equip

Legend

- 68W = Healthcare specialist
- BFT = Blue Force Tracker
- C2 = Command and control
- cal = Caliber
- CREW = Counter radio-controlled IED electronic warfare
- EOF = Escalation of force
- M1151 = High-mobility multipurpose wheeled vehicle
- MOS = Military occupational specialty
- MRAP = Mine-resistant ambush-protected vehicles
- QRF = Quick reaction force

drivers and gunners from the shops in the motor pool. These crews did not receive any of the mounted maneuver training at home station that the Top Flite crew had received, but they were expected to complete the same tasks. We adopted a strict policy that any new crewmember going out as a truck commander, driver, or gunner had to complete at least four ride-along missions in which his goal was to watch and learn. We also took advantage of the FOB's range to conduct crew-served weapons training and the FOB's counter-IED lane to give the new crews a chance to move through mounted and identify hazards. These crews were used nearly every day, and we could not have accomplished our missions without them.

Maintaining Operating Tempo

On a typical day in Iraq, the 26th BSB was asked either to conduct three logistics convoys or to conduct two logistics convoys and provide four gun trucks for EOD security, route security, or mounted and dismounted patrolling support to a field artillery battery. Some days we were forced to spike and conduct four logistics convoys. The battalion commander's guidance throughout the 15-month deployment was to get each gun truck crew off the road once every 10 days. However, we did not always meet that goal because of our mission workload.

The Top Flite platoon tackled a myriad of missions during the almost 15-month rotation. We conducted over 700 logistics convoys. We transported more than 70 detainees and provided security escorts for more than 80 EOD missions. We conducted 60 days of route

security and 30 dismounted patrols and participated in 9 company- and platoon-level offensive operations. We constructed three helicopter landing zones and, most importantly, secured the logistics trucks that carried the supplies needed to build 10 patrol bases in the BCT's operating environment. We were one of the first units to rely on mine-resistant ambush-protected vehicles (MRAPs) and pioneered many of the modifications to the MRAP and its employment techniques.

The Top Flite platoon and the distribution company trucks that it escorted made a name for themselves by pushing longer, harder, and more often than anyone thought possible. We were able to do this by sticking to our systems: the fusion meeting, the logistics convoy brief the night before, the SP minus 2 go/no-go brief to ensure conditions were set, and the pre- and post-operations vehicle quality assurance and quality control process that made certain our vehicles were road-worthy every day. These systems sustained us and kept unnecessary vehicles and personnel off the road. These systems ensured that everyone knew the latest significant actions across the BCT operating environment and the current threats and set our Soldiers up for success. That was our theme, and thankfully, we succeeded.

The bottom line is this: adopt a system and stick to it. We definitely operated on a "bend but don't break" philosophy regarding the operating tempo. The emphasis we placed on maintenance ensured that our vehicles made it through the rigorous operating tempo. The flexibility of the Top Flite security platoon enabled us to successfully sustain a BCT spread across a 70-mile area. Every day we executed multiple logistics convoys. The Soldiers of this great platoon never wavered and were always ready at start point.

ALOG

LIEUTENANT COLONEL MARK J. WEINERTH IS AN OPERATIONS OFFICER IN THE U.S. NORTHERN COMMAND J-4. HE WAS THE COMMANDER OF THE 26TH BRIGADE SUPPORT BATTALION WHEN HE WROTE THIS ARTICLE. HE HOLDS A B.A. DEGREE IN PSYCHOLOGY FROM SAINT BONAVENTURE UNIVERSITY AND AN M.S. DEGREE IN ADMINISTRATION FROM CENTRAL MICHIGAN UNIVERSITY. HE IS A GRADUATE OF THE ORDNANCE OFFICER BASIC AND ADVANCED COURSES AND THE ARMY COMMAND AND GENERAL STAFF COLLEGE.

CAPTAIN TIMOTHY N. PAGE, A RECENT GRADUATE OF THE COMBINED LOGISTICS CAPTAINS CAREER COURSE, IS IN TRANSITION TO THE 363D TRAINING SUPPORT BATTALION, 3D BRIGADE, 91ST DIVISION, AT LOS ALAMITOS, CALIFORNIA. HE WAS THE COMMANDER OF B COMPANY, 26TH BRIGADE SUPPORT BATTALION, WHEN HE WROTE THIS ARTICLE. HE HOLDS A B.S. DEGREE IN LIBERAL STUDIES FROM THE UNIVERSITY OF NORTHERN IOWA AND IS A GRADUATE OF THE INFANTRY OFFICER BASIC COURSE, MECHANIZED LEADERS COURSE, AND THE UNIT MOVEMENT OFFICERS COURSE.



Gun trucks stage in preparation to embark on a security mission.

The roles of our sustainment Soldiers are constantly changing in the Global War on Terrorism. Before Operation Iraqi Freedom (OIF) 07–09, forward support companies did not provide internal gun truck security for presence patrols, combat replenishment operations, recovery operations for damaged vehicles, or escort operations for missions. However, coalition forces took a different approach in OIF 07–09. As part of an air assault battalion that emphasized combat training in addition to traditional sustainment roles in preparation for deployment, I can attest that, while it was a challenge taking the time to train sustainment Soldiers in combat arms-specific skills, the dividends were immense during our first 100 days in Iraq.

Determining Our Training Needs

After graduating from the Quartermaster Basic Officer Leader Course in March 2007, I was assigned as a platoon leader for the distribution platoon in

F Company, 526th Brigade Support Battalion, 2d Brigade Combat Team, 101st Airborne Division (Air Assault). My sponsor had informed me of our brigade's imminent deployment to the OIF theater of operations. However, not until I met my company commander did I learn exactly how much training my sustainment Soldiers and I had in store. He informed me that not only did he expect me to train, lead, and maintain a transportation section to provide logistics support for the 2d Battalion, 502d Infantry Regiment, but he also expected me to train sustainment Soldiers to perform internal gun truck security. I then took a look at the military occupational specialty 92F (petroleum supply specialist), and 88M (motor transport operator) skill sets in order to come up with a training concept for performing simultaneous combat and support missions with one distribution platoon.

We had to overcome many obstacles before beginning our mission. Building a gun truck section with



Added Combat Multipliers

BY FIRST LIEUTENANT RANDY S. HEATH

logistics Soldiers meant that we needed to undergo a complete change in the way we conducted business. In April, we conducted Eagle Flight I/II at Fort Campbell, Kentucky. Although resources were scarce, my Soldiers and I conducted numerous missions. This allowed us to find out what our strengths and weaknesses were and how we needed to improve in every aspect of this new role. We were afforded opportunities to perform joint missions with our combat arms counterparts, which allowed us to incorporate their tactics, techniques, and procedures (TTP) and standing operating procedures (SOPs) into our agenda. At this point, I was still undecided as to which of my Soldiers would have transportation platoon duties and which would have gun truck platoon duties. It was still too new for us. I knew that our upcoming deployment to the Joint Readiness Training Center (JRTC) at Fort Polk, Louisiana, would allow me ample time to prepare my plan and brief my concept of operations to my leaders.

Using the JRTC Experience for Planning

Once we arrived at JRTC, we were able to overcome some of the lack of resources we had experienced previously. We were issued four M114 high-mobility multipurpose wheeled vehicles, thereby allowing us to conduct all of our own security operations with oversight from observer-controllers. Many of the observer-controllers had experienced at least one deployment to Afghanistan or Iraq. This gave them the knowledge and experience needed to help us refine our TTP and SOPs.

We were allowed plenty of time to determine our load plans and what equipment we would need in addition to the standard basic issue items. At this point, I identified five teams for my new gun truck platoon.

After our rotation was completed at JRTC, I sat down and talked with my platoon about our mission. Afterward, I felt that we had overcome our “predeployment jitters,” and I was more confident in our ability to perform internal security and transportation missions.

Training in Kuwait

In October 2007, my battalion deployed through Kuwait to Iraq. While in Kuwait, we were able to spend more time on the range. This was extremely beneficial to my Soldiers’ confidence in their abilities to employ the M2 .50-caliber machinegun and the M249 squad automatic weapon. Before departing Kuwait, we went to a training lane in which my Soldiers had to react to adverse situations, such as improvised explosive devices (IEDs), explosively formed penetrators, small-arms fire, indirect fire, and hostile crowds. We improved our traveling formations and incorporated new skills into our TTP, such as setting up landing zones for aeromedical evacuations. After months of training, we were ready to begin our mission as a gun truck platoon.

Establishing Operations in Iraq

We arrived in Iraq in late October 2007. The unit with which we conducted the relief in place and transfer

Security platoon members conduct concurrent range training to hone their skills while deployed to Iraq.





The gun truck platoon provides dismounted security for the civil affairs team, various State Department officials, and other dignitaries during a youth soccer competition in Wasit Province, Iraq.

we conducted a handoff with the 1st Brigade, Georgian Army. Being considered for this high-visibility tasking was a major accomplishment for our sustainment Soldiers. They conducted the mission with extreme professionalism.

of authority had seven gun trucks; however, the unit primarily relied on its combat arms counterparts to conduct many of its missions. This was not part of our plan; we intended to conduct our own security. We decided that we wanted not only to provide security for combat replenishment operations but also to provide the same gun-crew support to the mission as our combat arms counterparts.

When I completely understood what my concept of support would be to Area of Operations Naples, I determined that I needed another senior noncommissioned officer. I explained this need to the company commander, and he agreed. I requested a sergeant first class with whom I had served in a platoon leadership capacity and who I knew had the tactical knowledge and expertise to spearhead my intent. He later became the gun truck platoon sergeant.

After the new sergeant first class came on board in late November, I allowed him to build his teams as he saw fit. He explained his need to have a compound of his own, with enough living space for him and his Soldiers to facilitate our goal of becoming mission ready in the least amount of time. We obtained control of a compound that had originally been built to house Iraqi Army soldiers. The six vehicle commanders ate together, worked out together, and slept in the same area. They were constantly discussing new TTP and planning the concept of support for the next mission. During our 14-month deployment, the gun truck platoon provided security for 208 combat replenishment operations, 27 recovery operations, 12 fortification operations, and 11 presence patrols.

Providing Escort Security

The battalion S-3 selected our platoon over 18 other gun truck platoons to provide escort security for an Iraqi Army demining team. This mission required us to link up with a coalition force element at Forward Operating Base (FOB) Kalsu and escort the demining team approximately 75 kilometers to FOB Scania. There,

Because of its ability to handle this high-visibility operation, the gun truck platoon was selected to perform personal security detachment operations for various State Department officials working as part of the Provincial Reconstruction Team. In addition to these personal security detachment missions, the gun truck platoon conducted joint security operations with the 511th Military Police Company, a Lithuanian personal security detachment platoon, the Iraqi Army, the Iraqi National Police, and Georgian Army elements. The platoon's ability to work with these various coalition force partners enabled them to conduct a variety of security operations. The gun truck platoon's ability to accomplish nothing less than laudatory results was just cause for their selection to perform a joint security operation with elements of the El Salvador Army task force to provide in-transit and on-the-ground security for the U.S. Ambassador to El Salvador.

The roles of our sustainment Soldiers are constantly changing in the Global War on Terrorism. The success of this 41-Soldier distribution platoon in creating a gun truck and transportation platoon was known throughout Area of Operations Naples. Though creating the gun truck platoon was training intensive, it increased the distribution platoon's flexibility and made the platoon an additional maneuver asset to accomplish the battalion's mission. Although the training was tough on the Soldiers, they were proud of their readiness to take on any mission. Their ability to remain vigilant and prove their warrior ethos in everyday actions downrange deserves accolades from every level.

ALOG

FIRST LIEUTENANT RANDY S. HEATH IS THE DISTRIBUTION PLATOON LEADER OF F COMPANY, 526TH BRIGADE SUPPORT BATTALION, 2D BRIGADE COMBAT TEAM, 101ST AIRBORNE DIVISION (AIR ASSAULT), WHICH DEPLOYED TO FORWARD OPERATING BASE KALSU, IRAQ, FOR OPERATION IRAQI FREEDOM 07-09. HE HOLDS A BACHELOR'S DEGREE FROM THE UNIVERSITY OF MARYLAND UNIVERSITY COLLEGE-EUROPEAN DIVISION AND IS A GRADUATE OF THE QUARTERMASTER BASIC OFFICER LEADER COURSE.

Protecting Our Logistics Assets: A Look to the (Near) Future

BY LIEUTENANT COLONEL SCOTT A. REW

The Army is working to provide technologies that better protect Soldiers in the theater of operations. These new technologies will also help keep logistics Soldiers safe while conducting convoys.

In the spring of 2003, coalition forces were engaged in the early stages of Operation Iraqi Freedom (OIF). Units struggled to find ways to protect convoys as they moved supplies forward over sandy roads littered with destruction and debris and imperiled by improvised explosive devices and ambushes. The following vignette illustrates the dangers of logistics operations during those early months.

As the supply convoy rumbled down the road, Staff Sergeant Miller was apprehensive. He had been on the road for hours bringing fuel, ammunition, and other much-needed supplies to units deployed throughout the area of operations. The road was normally safe, but Miller knew that could change.

The attack began without warning. The forward and rear guard vehicles in the convoy were immediately disabled, as were air guards positioned

throughout the convoy. Bullets were flying everywhere; it was hard to discern where to return fire. Convoy resupply vehicles unable to withstand even small-arms fire were quickly damaged. A few of the heavier vehicles were relatively intact but unable to bring coordinated covering fire, and what they could provide had minimal effect.

Miller grabbed the hand mike and immediately sent a contact report. Disregarding his personal safety, Miller moved through the convoy, helping where he could and trying to establish defensive fires. Suddenly, U.S. Apache attack helicopters appeared, delivering devastating fire on the enemy. The attackers disappeared, and Miller was able to catch his breath and take stock. A few of his men were wounded, although none seriously. Four vehicles were destroyed, and seven were badly damaged.

The common remotely operated weapon station (CROWS) is designed to be mounted on a nonturreted light-armored platform to give Soldiers the capability to accurately engage targets while safely under armor. Since it is designed to be used with light-armored vehicles, CROWS is particularly well suited for logistics convoy vehicles.



All convoys, regardless of size, need to be equipped with crew served weapons. It is also important to equip convoys with M203 grenade launchers to give the convoy a rudimentary indirect fire capability (many small arms and RPG attacks originate from irrigation ditches or behind courtyard walls where direct fire weapons are less effective than indirect fire weapons in killing the enemy in defilade).

—2003 Senior Mission Commander Trip Report, submitted by a liaison team visiting the National Training Center in preparation for their unit's deployment to Iraq

Reviewing the Lessons of Iraq

After-action reports generated from maneuver, support, and sustainment organizations providing support on the asymmetric battlefield revealed these common shortfalls—

- Overextended lines of communication, with forward units running critically short of classes I (subsistence), III (petroleum, oils, and lubricants), and V (ammunition) supplies.

- A long logistics tail and vulnerable supply lines. Light-skinned resupply vehicles with minimal weapons protection provided especially tempting targets for the enemy. The enemy quickly recognized supply lines as the Achilles' heel of U.S. and coalition forces and developed tactics, techniques, and procedures (TTP) to exploit those vulnerabilities.

- The inability of our lightly protected maneuver sustainment forces to bring a lethal overmatch of organic firepower to bear.

More than anything, OIF has reminded us that, on the asymmetric battlefield, *everyone* needs the best situational awareness, survivability, and combat responsiveness available. Consequently, as a primary target for insurgent attacks, sustainment units in general and convoys in particular should be given special consideration and priority for much-needed enhanced capabilities. Unfortunately, sustainment formations often are the last to get improved tactical capabilities. Clearly, the old way of doing logistics business will no longer work.

Examining Force Capabilities

In the past 5 years, the U.S. military has made significant progress in addressing the shortfalls revealed by our operations in Iraq. Units have moved out of large forward operating bases and now operate within cities, neighborhoods, and villages. This change in doctrine and TTP and the employment of more heavily armored and armed cargo transport vehicles with escorts have mitigated portions of the problem but do not address all of the issues.

One key element that must be addressed is the performance of vehicle protective weapon systems. When a vehicle comes under fire, it must not only protect the

crew but also provide a means for the crew to fight its way out of the situation. After-action reports, primarily those out of OIF, showed that maneuver support and sustainment units were woefully under-armed and, in almost every case, were met with overwhelming enemy firepower when engaged. In engagements in which units with light-skinned tactical vehicles were successful in fighting their way out of an ambush, their ability to bring coordinated crew-served weapons fire to bear against the enemy played a pivotal role in their survival.

Doctrinal missions and collective tasks for sustainment organizations have long reflected the need to react to various threats, but a new and greater emphasis on dealing with threat forces now takes precedence in sustainment capability development. Although doctrinal and organizational changes have provided some relief, logisticians must identify and integrate emerging technologies that provide leap-ahead advantages.

Soldier Protection

Enhanced armor protection offers only a partial solution. Although an armored cargo vehicle (or even an up-armored high-mobility multipurpose wheeled vehicle) is a step in the right direction, increased armor protection often merely precedes relatively simple advances in threat weapons. The key to protecting mounted Soldiers is that, once those Soldiers are engaged, the systems should not only protect the crew from the initial effects of combat but also enable the crew to fight out of harm's way. To achieve this capability, the vehicle must have systems that provide improved situational awareness to the vehicle commander and drivers in addition to enhanced armor protection, resulting in more effective survivability and increased combat effectiveness.

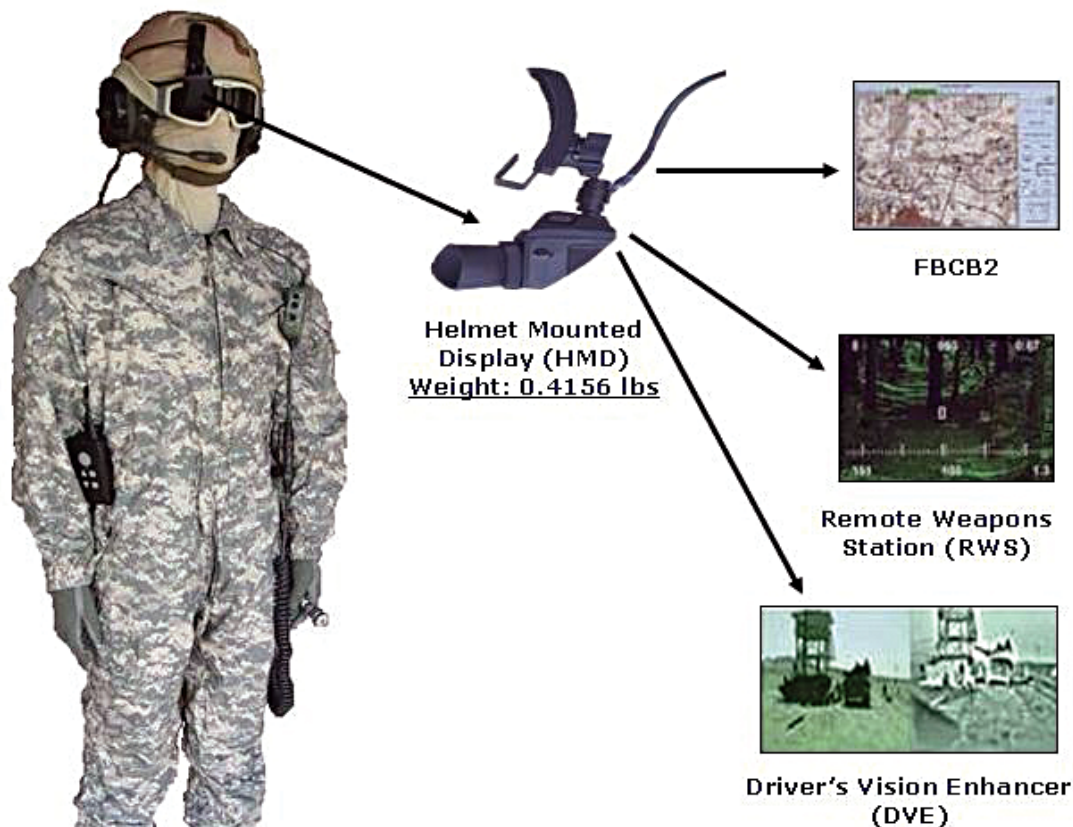
In theater, the Army currently has units equipped with the Mounted Soldier System (MSS), which demonstrates how improved situational awareness is employed with enhanced armor protection. The first increment of MSS enables crews to integrate battle command functions, such as voice and data transmission, on combat platforms and among other vehicles

in the formation. This shared situational awareness enables vehicle crews in the formation to engage targets using the Remote Weapons Station (RWS), thus maximizing the use of enhanced armor protection and limiting Soldier exposure. Both MSS and RWS are sponsored and supported by the Army Armor Center and the Program Executive Office (PEO) Soldier.

MSS. This system consists of lightweight, modular, mission-tailorable, integrated equipment and command and control information systems that mounted Soldiers use when conducting operations on and off of their assigned platforms or vehicles. The components include an improved combat-vehicle crewmember helmet with a “heads-up” display and an untethered communications system. Through the heads-up display, a crewman can see the battle command screen or the sight picture of the weapon on the common remotely operated weapon station (CROWS). These technologies ensure that all elements of the formation have a common operating picture. Soldiers are able to maintain continuous voice communication and receive situational awareness information to improve their mobility and survivability. The MSS capability development document was approved on 23 January 2007.

The improved situational awareness provided by MSS allows mounted Soldiers greater mission flexibility by improving Soldier-to-platform or Soldier-to-vehicle communication capability. MSS improves force protection by providing enhanced protection against ballistic, environmental, flash, flame, heat, and chemical, biological, radiological, and nuclear hazards. Future capabilities will provide an untethered communication capability that works off of the platform for up to 500 meters.

CROWS II. This is a lighter version RWS that provides a stabilized, shoot-on-the-move, remote vehicle-mounting system that, with a ballistic computer, can be integrated with the MK19, M2, M240, and M249



The helmet-mounted display allows the Soldier to access Force XXI Battle Command Brigade and Below (FBCB2), Remote Weapons Station, and a driver's vision enhancer while keeping his hands free.

machineguns. This system can be mounted on any tactical wheeled or tracked vehicle. CROWS II allows the operator to remain under armor (the armor protection provided by the vehicle) by providing enhanced target acquisition, identification, and engagement capabilities to nonturreted, light-skinned or -armored vehicles in units whose missions place unprotected gunners at high risk. Specific capabilities of the system include—

- A sensor suite that permits target engagement under limited visibility conditions.
- A three-axis stabilized mount.
- A laser rangefinder.
- Fire control software that allows on-the-move target acquisition and first-round burst target engagement and can track targets in elevation independently of gun motion.

CROWS II is *exactly* the leap-ahead technology needed to increase the combat capability of our mounted Soldiers, especially those in the logistics arena. The CROWS II capability production document was approved on 1 August 2005.

Future CROWS II capabilities will provide Army and joint forces with enhanced survivability, lethality, and situational awareness. CROWS II will provide

vehicle-mounted machineguns with the capability for automated fire control and stabilization for shoot-on-the-move engagements. It also will have improved optical devices to permit target surveillance at greater distances. Currently, the gunner is exposed when firing the weapon; the first increment of CROWS II will mitigate this vulnerability. Future increments will integrate additional capabilities, such as automatic threat fires detection and targeting to rapidly pinpoint incoming fire locations and cooperative target identification (CTI) technologies. Net-ready capabilities will also be available to send threat-location, targeting, and engagement information rapidly to higher headquarters and adjacent units.

Technological Integration Possibilities

The technological improvements found in MSS and RWS can be provided to logisticians. The integration of MSS and CROWS II would exponentially increase the lethality and survivability of logisticians on the asymmetrical battlefield. Crewmembers of support platforms with access to a battle command system would have situational awareness of their formation and their immediate battlespace. Overlays could be posted on the battle command system, allowing logisticians to track their progress along the route to their release point.

By using the heads-up display, Soldiers can stay under armor and use thermal sights to scan their sectors of responsibility. The fire detection capability allows crewmen to rapidly locate enemy fire and return accurate first-round bursts on the target while under armor. They can lase targets to populate the battle command systems that provide critical situational awareness to leaders and more Soldiers in the formation. Using the CTI capability, crewmen can query the target area to confirm that no friendly forces are in the area, thus mitigating the danger of fratricide. The voice-activated communications of MSS allow Soldiers to immediately send contact reports or issue orders, hands free, using the integrated communications capability built into their helmets. Integrating MSS and CROWS II provides a quantum leap forward in protection, survivability, and lethality for logisticians.

Now envision the original scenario in the near future and follow Staff Sergeant Miller as he and his Soldiers execute the same mission over the same terrain, facing the same ambush. By combining these technologies as we move toward the objective requirements for both systems, we can improve the outcome for Miller.

As the supply convoy rumbles down the road, Staff Sergeant Miller is apprehensive but confident.

Although he has been on the road for hours with his logistics convoy, he knows he is ready for anything the enemy might attempt. Sensors in the area have previously populated the battle command system with suspicious unknown formations, and MSS provided Miller with situational awareness, alerting him to possible ambush sites. Based on this information, he has changed his route twice to avert likely ambushes.

Even though he has received intelligence updates on his battle command system, an ambush begins with almost no warning. The forward and rear guard vehicles in the convoy are immediately hit, but because the crewmembers are under armor, they suffer no casualties. Miller's CROWS II threat fire detection capability immediately slues the gun toward the location of the enemy positions he observes through his heads-up display. Using his voice-activated communications, he sends an immediate contact report and, after lasing the target, populates the battle command screen. This provides everyone, including his chain of command, with the location of the contact.

Staff Sergeant Miller instantly confirms that no friendly forces are in the area through his battle command system and, using the CTI, engages the target with accurate and lethal first-round bursts, all while under armor protection. He quickly coordinates follow-on actions, enhancing unit survivability and success. Even though his actions have already blunted the enemies' intent, he knows the quick reaction force or attack aviation assets are alerted and can be dispatched to an accurate grid location of the enemy contact through the battle command system. With minimal damage to his vehicles and no injuries, Miller is able to continue immediately on his mission.

As the Army works to proliferate and integrate emerging technologies into a coordinated system across the distributed battlespace, increased situational awareness, survivability, and effective combat responsiveness are keys to success for all of our current and future forces, regardless of their primary mission. **ALOG**

LIEUTENANT COLONEL SCOTT A. REW IS THE MATERIEL BRANCH CHIEF FOR COMBAT DEVELOPMENT AT THE ARMY ARMOR CENTER AT FORT KNOX, KENTUCKY. HE HOLDS A BACHELOR'S DEGREE FROM SOUTHERN ILLINOIS UNIVERSITY AND A MASTER'S DEGREE FROM ST. AMBROSE UNIVERSITY. HE IS A GRADUATE OF THE AIR DEFENSE ARTILLERY OFFICER BASIC COURSE, ORDNANCE OFFICER TRANSITION COURSE, COMBINED LOGISTICS OFFICERS ADVANCED COURSE, MATERIEL ACQUISITION BASIC COURSE, AND THE ARMY COMMAND AND GENERAL STAFF COLLEGE. HE HOLDS A LEVEL III CERTIFICATION IN PROGRAM MANAGEMENT FROM THE DEFENSE ACQUISITION UNIVERSITY.

Reflections on a Battlefield Staff Ride

BY MAJOR ADRIAN C. CLARK, BRITISH ARMY

Dwight D. Eisenhower was fond of saying that he found plans useless but planning indispensable. This mindset is comparable to that of General George Washington if you consider events leading up to the 1781 siege of Yorktown, Virginia. The cataclysmic events of that battle added to the British Government's conviction that the fight to keep the American colonies under the rule of the British Parliament was beyond winning. With this in mind, Combined Logistics Captains Career Course (CLC3) class 08-004 visited Yorktown to reflect on the clash between the forces of the British and Washington's American patriots in the fall of 1781.

The story illustrates strategic opportunism supported by logistics planning excellence. It features coalition and joint warfare, with the accompanying strategic maneuvers of political superpowers. Most interesting to the military theorist, it shows how a force can unwittingly be the architect of its own demise through complacency, arrogance, and failure to apply the fundamental principles of war. We witnessed how Washington's forces seized the initiative and tightened their grip around the British from the land and sea before dealing a decisive blow. Yorktown provides a great lesson in the use of the commander's most powerful tool—risk.

Yorktown

In May 1781, the British field commander, Lieutenant General Lord Charles Cornwallis, received his order from General Sir Henry Clinton in New York to establish a deep-sea port; Cornwallis chose Yorktown. From the reconstructed breastworks, one can see the fields of fire available to the British and their colonial allies and the advantages offered by the depth of their defenses for internal lines of maneuver and sustainment. To Cornwallis, the Royal Navy's mastery of the sea was a foregone conclusion. Given his limited knowledge of the activities of the French Fleet under

This painting depicts the storming of British Redoubt Number Ten by American forces at Yorktown, Virginia, in 1781. (Photo courtesy of the U.S. Army Center of Military History)

the command of Rear Admiral Francois Joseph Paul, Comte de Grasse, this seemed a fair supposition.

CLC3 students were afforded a great insight into the assumptions, lack of information, and poor intelligence that put Cornwallis on the path to an ignominious surrender. Our scene was set by Dr. Steve Anders, Army Quartermaster Center and School historian, at the National Park Service's visitor center. The landscape has not changed markedly since 1781, and one can still see the advantages Yorktown offers the defender. Superb replica guns illustrate the cumbersome nature of an 18th century defensive force and its inherent logistics challenges. Dragging 5-ton artillery pieces up precipices is not for the work shy. However, the artillery location provided the British reassurance of a strong position. Had the decisionmaking processes we apply today been used, British commanders might have been comforted by flank protection from a powerful navy, an enemy engaged hundreds of miles away in New York, recent tactical victory over the local insurgency, and time to recuperate their soldiers in anticipation of the arrival of reinforcements.

British Occupation of Yorktown

Having established their position in July, the British made a lackluster effort to consolidate their position throughout August. This left the CLC3 students



pondering: Why the apathy? This was a force of well-equipped, seasoned, professional soldiers with a healthy respect for their opponent, having suffered recent casualties to the significant detriment of their combat power. Given the apparent complacency with which Cornwallis and his leaders approached the business of constructing fortifications, our students were left with one simple deduction—the British Army was oblivious to the activities of their enemy.

Underestimating your opponent is a chronic condition of the weary soldier. Cornwallis faced a formidable adversary. As noted by Robert Middlekauff in his book, *The Glorious Cause: The American Revolution, 1763–1789*, Washington's impressive eye for detail and reputation for thorough administration were legendary and the lynchpin of his success as a military planner. Washington was a thorough logistician and gifted strategist. Like Lieutenant General Ulysses S. Grant 80 years later, Washington planned his strategic move from New York 450 miles south in extraordinary detail. (The magnitude of the planning task was not lost on the CLC3 students, who themselves had undertaken the planning of a move over similar distances for their tactical logistics exercise.) Like Grant, to reduce his logistics footprint, Washington used carefully selected routes and achieved an operating tempo that concentrated his combat force just where and when he needed it. With his loyal French subordinate Lieutenant General Jean-Baptiste Donatien de Vimeur, Comte de Rochambeau, Washington personally supervised the discharge of the stocks from shipping along the James River, enabling them to bring to bear a formidable weight of firepower. The fact that Cornwallis appeared blithely ignorant to these maneuvers until far too late remains a mystery.

Throughout the day, students were reminded of the logistics horsepower that laid the foundation for General Washington's success.

The Battle of the Virginia Capes

During the staff ride, the students were able to consider what effect decisions made far from the field of conflict had on the tactical situation. A French fleet under Rear Admiral De Grasse had sailed, unchecked, from Brest in March 1781. This fleet arrived in April and was ostensibly fixed in Martinique to defend vital French interests in the prized West Indies. Here was a lesson in the importance of empowering commanders. The rear admiral recognized the opportunity, understood the political intent, grasped the magnitude of the situation, and exploited opportunity by sailing north despite colossal risk.

The CLC3 students wondered whether the decisionmaking processes used by the Army today would have helped or hindered the British in selecting

this course of action. De Grasse was risking French global interests by leaving his post to support Washington. He was seeking to link with forces that were struggling to survive, let alone triumph, and he was challenging the world's most formidable maritime force. Would today's military commanders, given a mass of information and the counsel of staff who would explain these extenuating circumstances, have ventured from the protection of Martinique? Fortunately for those who cherish the independence of the United States, De Grasse was not thus impaired and followed his destiny. The ensuing naval Battle of the Virginia Capes, which was fought between 5 and 13 September 1781, was lost by the British.

Why Cornwallis Surrendered When He Did

Meanwhile, back at Yorktown, Cornwallis, who could hear the naval guns, was about to come under heavy bombardment and be outnumbered and hemmed in on all sides by a disciplined and suitably sustained force. Imagine his feelings when, instead of seeing the red and white of Her Majesty's Royal Naval ensign, he saw the unpleasant sight of the archenemy's battle fleet sailing up the Chesapeake Bay. It should have been time to surrender.

At this point in the story, Dr. Anders gave our aspiring company commanders the chance to speculate on how they would respond to the challenge, given these local difficulties. Our students first had to come to terms with the bewildering issue of Cornwallis's withdrawal. Before any contact with the enemy and for no apparent reason, he withdrew from his outer perimeter of defenses. Examination of Cornwallis's previous performance in the colonies offers no clue to explain this bewildering tactical maneuver. He had conducted himself with distinction as a battalion commander in the Seven Years War. He respected his opponents and understood their competencies. To unravel this conundrum, we looked at Cornwallis's background.

Charles Cornwallis, 1st Marquess Cornwallis, was on record as being sympathetic to the colonists' cause. His voting record in the House of Lords illustrated that he felt the American call for independent government was a worthy cause. However, having taken a break from military service and being a loyal servant to the Crown as well as friend of King George III, he had accepted a commission as a major general to help quell the insurrection in the colonies.

He had applied his extensive military talents to destructive effect. Despite extending his lines of supply that stretched back to the sea from deep in the American hinterland, he had managed to sustain his force and claim a series of victories. We found him in Yorktown, after 3 months on campaign and having been hounded by American insurgents in the Carolinas,

Our students were able to reflect on how the principles that govern success or failure in military operations today resonate profoundly with the past.

with a seriously degraded force in dire need of recuperation (reset). The CLC3 captains had to ask themselves if they would be equally susceptible to the state of mind that led to complacency. How would they deal with the situation? Thoughts were shared on deception, concentration, breakout, subterfuge, and negotiation. Ultimately, they agreed that sacrificing the depth of one's defense was an inexplicable maneuver. It may have reduced the human toll of the battle, but it certainly hastened the end of the siege and, in turn, the end of the Revolutionary War.

Perhaps Cornwallis had in mind the approach explained by Sir Winston Churchill, writing in *The London Magazine* on the French and German conflagration at Verdun in 1916, when he said, "Meeting an artillery attack is like catching a cricket ball. Shock is dissipated by drawing back the hands. A little 'give,' a little suppleness, and the violence of impact is vastly reduced." There is no written evidence to support a theory that Cornwallis's orders to withdraw were executed prematurely, but it does offer some explanation.

The Moral Component of Fighting Power

Applying a 21st-century mindset to try to make sense of 18-century attitudes is intriguing. We are helped by a plentiful supply of letters and historical journals that serve to illustrate, compare, and contrast states of mind on the Yorktown battlefield. One of the more flamboyant characters used by Dr. Anders to develop our discussions on the nature of leaders was Alexander Hamilton. A battalion commander at the age of 24, Hamilton went on to be a successful Secretary of the Treasury, but he made his mark on the battlefields around Yorktown. Hamilton seemed to have an insatiable appetite for glory. He made it known to his commanders, in thought, word, and deed, that he was the man to lead the assault, any assault; he just wanted to confront the enemy. Students learned how he ordered a company to the top of a parapet in view and range of the enemy to conduct close-order drill. This display of obedience, courage, and professional excellence must have been as perplexing to the British as it was to the soldiers who were subject to the order. The CLC3 students had the chance to see just how close the enemy's guns were positioned and marvel at the fact that this bravado attracted no fire from the British. The incident reinforced the fighting spirit of a force whose morale was firmly in the ascent. Hamilton's famous charge, immortalized in later Revolutionary War art, provided him the glory he sought.

How did the environment in which these soldiers found themselves influence their will to fight? What lessons were the students able to draw from the attitudes of the forces engaged in this bloody contest? Witnessing how a mighty fighting force was subdued was a profound lesson to all. The officers were able to see how ordinary soldiers with a noble cause achieved extraordinary victories. Competent commanders, courageous comrades, and the support of loyal allies all resulted in an ignominious defeat for the British.

A multitude of sources are available for determining how to execute a staff ride. Many authors endeavor to provide a neat rubric that the busy planner can use. However, the most thorough preparation is worthless without passion. Steve Anders brings to his teaching a passion that, in turn, overcomes the inevitable limits in resources. Our students were able to reflect on how the principles that govern success or failure in military operations today resonate profoundly with the past—how command decisions do not follow set patterns, how resource constraints may not necessarily prove a weakness, and how selfless leadership breeds confidence, loyalty, and sacrifice.

Phase IV of CLC3 is the culmination of a 6-month investment in the professional development of Army captains, their Marine Corps comrades in arms, and their international brethren. In Phase IV, students have a chance to put into practice critical reasoning; share their understanding of the complexity, ambiguity, volatility, and uncertainty of the battlespace; and enjoy rare insights to American history.

Staff rides are not just for Soldiers. Our era of joint, multinational, and multiagency operations indicates that civilian staff can benefit from the dialog, inquiry, and thought that accompany the staff ride. Our rides provide the opportunity to honor past heroes, contribute to national understanding, and uncover neglected history. **ALOG**

MAJOR ADRIAN C. CLARK, ROYAL LOGISTICS CORPS, IS THE BRITISH EXCHANGE OFFICER AT THE ARMY LOGISTICS MANAGEMENT COLLEGE AT FORT LEE, VIRGINIA, AND THE DIRECTOR OF INSTRUCTION FOR THE COMBINED LOGISTICS CAPTAINS CAREER COURSE. HE WAS COMMISSIONED AT THE ROYAL MILITARY ACADEMY SANDHURST.

THE AUTHOR WOULD LIKE TO THANK DR. STEVE ANDERS, HISTORIAN FOR THE QUARTERMASTER CENTER AND SCHOOL AT FORT LEE, AND DR. CHRISTOPHER STOWE, HISTORIAN TO THE ARMY COMMAND AND GENERAL STAFF COLLEGE, FORT LEAVENWORTH, KANSAS, FOR THEIR PATIENT AND THOUGHTFUL EDITORIAL OBSERVATIONS.

The Case for an S-8 for the Brigade Combat Team

BY LIEUTENANT COLONEL KEITH GUDEHUS AND LIEUTENANT COLONEL GINA SMITH, USA (RET.)

Field Manual (FM) 3-0, Operations, states that the combined arms brigade combat team (BCT) is “the centerpiece for Army maneuver.” The Army’s operational career field has 18 branch specialties; however, only 17 of these specialties are represented on the BCT staff. The financial manager is the one specialist absent from the BCT organization. Establishing an authorization for the financial management function on the BCT staff would greatly enhance the BCT’s warfighting capabilities in full-spectrum operations, especially during stability operations.

As stated in the foreword of FM 3-0, “This edition . . . is a revolutionary departure from past doctrine. It describes an operational concept where commanders employ offensive, defensive, and stability or civil support operations simultaneously as part of an interdependent joint force to seize, retain, and exploit the initiative, accepting prudent risk to create opportunities to achieve decisive results.” Simply put, FM 3-0 equally weights offensive, defensive, and stability operations. This has vast implications across each of the warfighting functions. However, none of those implications are greater than those for the sustainment warfighting function, which includes financial management.

Stability Operations’ Effect on the BCT

Stability operations as part of broader full-spectrum operations place an enormous burden on the BCT staff. BCT staff members now must understand not only how to plan and execute offensive and defensive operations but also how to establish civil security and control, restore essential services, establish governance, and provide for economic and infrastructure development. Integral to these tasks are planning and funding coordination for contracting, support to the local populace, rewards programs, and support to foreign military and security forces.

From providing for interpreters to locally contracting for supplies and services to supporting emergency response programs in support of the local population, a BCT staff could conceivably execute missions with funding coming from multiple sources, with numerous legal implications. Coordinating with interagency and other Governmental organizations and coalition forces also complicates the funding situation for the BCT staff. Having subject-matter expertise on the staff to facilitate that coordination instead of entrusting financial management to a staff officer as an additional duty is

not only prudent but logical.

By their very nature, stability operations often require varied solutions depending on the geographical area. What is successful or necessary in one BCT’s area of operations may not be successful or necessary in another. Arming each BCT with its own monetary resources, fund certification capability, and resource management tools truly allows the BCT to be more adaptive, within the intent of FM 3-0, as the “centerpiece for Army maneuver.”

Finances and Full-Spectrum Operations

FM 3-0 says that mission command across the full spectrum of operations also “demands that subordinate leaders at all echelons exercise disciplined initiative, acting aggressively and independently to accomplish the mission within the commander’s intent. Mission command gives subordinates the greatest possible freedom of action.” However, the BCT commander currently must go outside his own organization to get support and advice regarding financial management. The potential bureaucratic response is unacceptable given the complex nature of full-spectrum operations, particularly stability operations.

Two stability tasks in particular—restoring essential services and supporting economic and infrastructure development—have significant financial management implications. Putting money in the right spot in near-real time can make the difference between mission success and failure, and the BCT commander should “own” the capability to do so.

Paradigm Shifts Needed

Some arguments about the role of financial management in the BCT are based on historical paradigms that must be revised. First, many commanders envision financial management either as pay support to Soldiers or as managing a unit budget designed primarily to support training and acquiring repair parts. FM 3-0 lists financial management as a part of the personnel services subfunction of the sustainment warfighting function. The implication is that providing pay support to Soldiers is the primary mission of financial management. Although supporting Soldiers unquestionably contributes to the mission, this constrained view of financial management masks its potential for supporting the operational and strategic objectives of stability operations.

In the contemporary operational environment, procurement has come to include everything from the local purchase of supplies to payment for security services by “concerned local citizens” (what we in the United States would recognize as “neighborhood watch”). The procurement process has expanded well beyond those things routinely secured by a warranted contracting officer. Stability operations include innovative programs such as the Commanders’ Emergency Response Program, which places high-dollar procurement decisions and capabilities at the BCT level. The expertise of a staff financial management officer is essential in helping the BCT commander properly steward resources for these types of operations.

Second, support to stability operations is manpower intensive, and the financial management requirements at the brigade level are unlike those for any conflict. Current operations show that on a monthly basis BCTs are managing millions of dollars spread over multiple types of funds. This responsibility, which is now added to the daily requirements of another staff officer as an additional duty, should be expertly handled by financial managers when planning and executing complex military operations.

As defined in doctrine, financial management core responsibilities include—

- Identifying funding requirements.
- Determining and coordinating funding sources to support stability operations.
- Establishing cash requirements and resupply processes.
- Providing procurement and contracting support.
- Developing spend plans on a recurring basis.
- Reporting budget and cash distribution.
- Accounting for funds distributions.

No professionally trained and educated financial management staff officer is currently available at the BCT level to perform these functions, and they are far too significant to be performed as an additional duty.

Finally, the argument that the BCT could receive its core financial management support from the division’s Deputy Chief of Staff, G-8, as a formal doctrinal technique defies the reality of what is occurring during stability operations in Iraq and Afghanistan. Fiscal capabilities have already been pushed out to brigade combat teams to support decisive operations with as little bureaucracy as possible, but this method relies on ad hoc management and stewardship. Unfortunately, none of the financial management expertise has gone with these resource capabilities, yet the regulatory and statutory responsibilities still fall heavily on the BCT commander’s shoulders. Any mission requiring a BCT to conduct operations, especially stability operations for any length of time, without a division headquarters present will require some form of ad hoc task orga-

nization to support the BCT commander. This is not consistent with the modularity concept in which BCTs are designed to operate semi-autonomously.

Relieving the Sustainment Brigade

Similarly, the BCT commander cannot expect, and does not get, the needed level of responsiveness from the three financial managers organic to the theater sustainment command’s sustainment brigade headquarters. The workload created by the additional mission of managing funding requirements with an eye toward the unique situation in each BCT’s area of operations exceeds the sustainment brigade’s financial management authorizations. Financial support to the BCTs is secondary to the sustainment brigade’s support mission. Using Soldiers from financial management companies posted in ad hoc fashion from the sustainment brigades poses challenges ranging from their levels of knowledge and experience and habitual support-and-trust relationships to separation of regulatory and statutory duties for management control and fraud prevention.

The emergence of the BCT as the basic building block of Army maneuver and the elevation of stability operations to a level on par with offensive and defensive operations have significant implications for Army force developers. These two doctrinal shifts demand an authorization for financial management expertise on the BCT staff to advise, plan, and coordinate financial management support for the BCT. The complexity of the financial issues, the multiple sources of funds, the volume of workload, and the enormous dollar amounts emphasize the requirement for a trained financial manager. An authorization for a financial management, or S-8, section in the BCT is a viable solution worth pursuing at the proponent level. **ALOG**

LIEUTENANT COLONEL KEITH GUDEHUS IS AN INSTRUCTOR WITH THE DEPARTMENT OF LOGISTICS AND RESOURCE OPERATIONS AT THE ARMY COMMAND AND GENERAL STAFF COLLEGE AND IS CURRENTLY DEPLOYED TO AFGHANISTAN. HE HAS SPENT 18 YEARS IN FINANCIAL MANAGEMENT SERVING IN UNITS FROM THE DETACHMENT TO THE ARMY COMMAND LEVEL. HE HOLDS A BACHELOR’S DEGREE IN FINANCE FROM TRUMAN STATE UNIVERSITY AND A MASTER OF ACCOUNTING DEGREE FROM THE UNIVERSITY OF MISSOURI-ST. LOUIS.

LIEUTENANT COLONEL GINA SMITH, USA (RET.), IS AN ASSISTANT PROFESSOR AT THE ARMY COMMAND AND GENERAL STAFF COLLEGE. SHE HOLDS A MASTER’S DEGREE IN PROCUREMENT AND ACQUISITION FROM WEBSTER UNIVERSITY. SHE IS A GRADUATE OF THE ORDNANCE OFFICER BASIC AND ADVANCED COURSES AND THE ARMY COMMAND AND GENERAL STAFF COLLEGE.

Modularity and Logistics

BY LIEUTENANT COLONEL MATTHEW D. REDDING

The Army is working to provide technologies that better protect Soldiers in the theater of operations. These new technologies will also help keep logistics Soldiers safer while they conduct convoys.

Modularity, which was designed to address mobility and asset control, has achieved some success in making the brigade combat team (BCT) the centerpiece of our warfighting formation. Modular design and organic logistics capabilities are essential in today's operations because most deployed BCTs operate in diverse terrain, under arduous environmental conditions, and against determined enemies. The modular BCT support design takes the best elements of the old main support battalion and pushes critical logistics enablers forward. The result is that our logistics formations are much more capable than they were before modular BCTs took the field.

The modular design has, however, raised questions in the minds of many logistics commanders who are faced with repeated deployments. These questions require serious debate and discussion to continue the evolution of modular capability. By examining some of the pressing questions raised by brigade-level logistics commanders, the Army can focus on forming solutions for its modular formations.

Why Does My MTOE Not Fit the Mission?

Whether the Army is engaged in maneuver operations or counterinsurgency warfare, the modification table of organization and equipment (MTOE) is a vestige of the

past and hampers the mission and force development in deployed theaters. A mission-essential equipment list should become the guideline for planning, training, and deploying a unit.

Although doing so seems antithetical to modular design, each brigade support battalion (BSB) must abide by its MTOE as it resets and trains for its pre-deployment mission readiness exercise (MRX). Modular forces are only able to transcend the limitations of their MTOEs with the extraordinary expertise of junior and midgrade noncommissioned officers (NCOs). We must continue to equip these multiple-tour veterans with home-station equipment sets that match (or replicate closely) the vehicle sets and equipment they will use once deployed. Light-skinned vehicles without digital communications or weapon mounts are of no use to units or their NCOs as they train Soldiers on battle drills needed to survive in combat.

I commanded the 626th BSB, 3d BCT, 101st Airborne Division (Air Assault), while it was deployed to Iraq as part of Multi-National Division-Center (Task Force Mountain). Our mission was that of a motorized or mechanized BCT, so our BSB's mission exceeded our air assault MTOE. Our early experience and planning said that we would need a wide range of heavy equipment transporters, M88 medium recovery vehicles, rough-terrain container

handlers, and materials-handling equipment to perform our distribution mission. But repeated submissions of operational needs statements were denied because the equipment was "not on our MTOE."

Meanwhile, the Soldiers depending on our battalion to distribute heavy engineer supplies, heavy equipment,

Soldiers from the 626th Brigade Support Battalion prepare for an early morning convoy. (Photo by SPC Luke Thornbury, 55th Signal Company)





Soldiers from B Company, 626th Brigade Support Battalion, perform hasty recovery on a fuel tanker south of Baghdad, Iraq. (Photo by SPC Luke Thornbury, 55th Signal Company)

shelters, frozen and fresh rations, ice, and class IX (repair parts) did not care about whether or not we had the equipment needed to perform that function. We were denied equipment even while standing next to motor pools full of echelons-above-brigade vehicles that stood idle. Worse, the equipment remained there because the process to request its use was completely unresponsive to tactical units at brigade level and below.

MTOE personnel problems also plagued our preparation for combat and our initial deployment. The Army Human Resources Command has a stated policy of filling a unit to 90 percent before its MRX. But our BSB was not 90-percent filled until the BCT started assigning us military occupational specialty (MOS) 11B infantrymen to fill critical slots in our distribution platoons. Our MRX preparation was also affected by the need to enroll Soldiers in the Warrior Leader Course and NCOs in the NCO Education System. This was a bill we willingly paid since it was the only opportunity for many of them to attend training between deployments.

Security escort requirements need to be factored into the MTOE. These escort positions may need to be MOS immaterial. We trained and formed security elements at home station to ensure we would have certified crews to man the 20 gun trucks that were not on our MTOE. If we must follow our MTOE to fill personnel requirements, then the MTOE should be built

according to what is required to man a rear detachment and should include the personnel to properly secure our unit's own movements.

After assuming our mission and picking up our base defense responsibilities, we found ourselves operating with only 65 to 70 percent of our personnel available to perform our daily logistics mission. We factored in 10 percent of our Soldiers being unavailable because of midtour leave, and while replacements did continue to flow, we never gained any aggregate strength because personnel were forced to redeploy or were injured. Soldiers arriving from the training base often were not in shape and sometimes had medical conditions that prevented them from deploying. Despite the month-long home station individual replacement training we conducted with our rear detachment, Soldiers joined us needing weapons training beyond the iron-sights skills they brought with them.

Where Is Our Modular Logistics Doctrine?

I may be the only one who noticed, but the most recent version of Field Manual (FM) 3-0, Operations, has no chapter on logistics. That is odd because the June 2001 version of FM 3-0 had an entire chapter on logistics and how important it is to operational commanders. I searched the entire text of the February 2008 version and found four small paragraphs of text that basically refer the reader to FM 4-0, Combat Service



Soldiers from A Company, 626th Brigade Support Battalion, conduct night sling-load operations in support of the 3d Brigade Combat Team, 101st Airborne Division (Air Assault).
(Photo by CPT Allison Flannigan, 626th Brigade Support Battalion)

Support, which was written in August 2003—before the modular BCT design was widely implemented. A new version of FM 4-0 is currently being developed, but for now, logistics Soldiers have to use the approved 2003 version.

After being disappointed by the new capstone doctrinal publication, I searched for some clarity in subordinate doctrinal publications. The fact that FM 3-24, Counterinsurgency, published in December 2006, has an entire chapter (Chapter 8) dedicated to sustainment seems to highlight the gross error of omission in our capstone operational doctrine.

FM 4-0, as currently written, is a decent document that logisticians read and then quiz each other on after they redeploy from Iraq or Afghanistan. The buzzwords in FM 4-0 all still apply to today's operational environment, but now they are exponentially more complex. Responsiveness, simplicity, flexibility, attainability, sustainability, survivability, economy, and integration are all wonderful words, but how do they relate to our modular formations? The old concepts of functional branch support are gone now that we operate in multifunctional organizations. Logistics doctrine needs to incorporate combat escort (gun truck) missions, MOS crosstraining (liquid logistics skills, multifunctional mechanics, and combat security functions), and engineering support for sustainment missions. FM 4-0 needs to reflect the complex nature of the logistics mission and how it relates to the mission of the BCT we support.

The new FM 4-0 cannot arrive soon enough. Senior mission commanders have defaulted to BCT-level commanders to figure out sticky issues like how to use forward support companies (FSCs). Army planners had a short debate over support relationships and the ability to weight main efforts, and then the debate became shrill and pointed and ended with a wide spectrum of arbitrary solutions that ranged from direct support to full attachment to maneuver battalions.

Our capstone doctrine should explain the possible solutions and provide our operational commanders (and their staffs) with a serious analysis of the consequences and benefits of different command and support relationships. Modular logistics doctrine needs to address “general purpose” forces and the need to task-organize for the a la carte missions that commanders face as they prepare for operational deployments that exceed their organizational designs.

Readiness measures need to be based on real standards that units can achieve according to the missions they face.

The medical community needs to be included in this debate because medical doctrine has become less relevant to Soldiers in the same way that logistics doctrine has in the past 3 years. Level II healthcare does not exist anymore, and medics in the brigade support medical company perform missions beyond the range of their training. The medical community should develop tailored solutions to reallocate essential medical support to combat units with specialty doctors and diagnostic equipment. With the number of replacements shrinking and repeated deployments, this need has never been more critical.

Medical concepts like tactical ground evacuation platoons no longer have a relevant purpose, given our reliance (or overreliance) on air evacuation platforms. The size of BCTs' operational areas and the

distance between them now rival those of Cold War-era division-sized formations. Advances in medical technology have increased our need for rapid and off-the-shelf solutions that fit our deployment and training requirements.

Where Is My Equipment for Training?

Training Soldiers on the Army's continental United States fleet of trucks is not going to prepare units for combat. Readiness measures need to be based on real standards that units can achieve according to the missions they face. The need to transition from MTOE-based readiness reporting to mission-essential readiness reporting has never been more important. In addition, modernization of the tactical truck fleet needs to double its pace. Much of the deployed fleet still comprises M900-series vehicles, which consume more time, manpower, and money to maintain than newer vehicles.

Current home-station equipment is woefully inadequate for conducting any realistic training. In our particular case, we were issued M1097 high-mobility multipurpose wheeled vehicles (two-seaters) without radios, Blue Force Tracker, vehicular internal communications intercoms, or ring mounts. This is not exactly the type of vehicle that helps to train new Soldiers on what to expect when they arrive in Iraq or Afghanistan. Maneuver and logistics units end up having to share fleets of vehicles and train on proxy equipment to prepare Soldiers for their next deployments.

The practice of leaving our equipment behind in the care of the Army Materiel Command (AMC) has received much acclaim. However, intense debate has ensued on how effective this has been in saving the Army money on maintenance and on how a lack of accountability affects a fleet.

The real opportunity being missed is that AMC commands the Army's entire logistics industrial base, which should be leveraged to produce "simulated capability" to train units that rotate home before deploying

again. Strategic leaders need to invest in the current fleet of trucks and transform them into simulated combat systems. AMC should seek to "set the grid," much like the trainers do at the National Training Center and the Joint Readiness Training Center, and allow units to draw only the training equipment they need to prepare Soldiers for the next deployment.

Low-density equipment and unique logistics sets need to be maintained as training implements at home station since the MTOE does not authorize the full range of required equipment. Borrowing equipment between units and between the Active and Reserve components allows Soldiers to be exposed to water purification equipment, heavy-lift transportation equipment, refrigeration vans and equipment, and mechanized track and turret systems.

Who Will Lead Our Soldiers?

The current operating tempo and the intense back-to-back deployment schedule that our forces experience are wearing down an entire generation of leaders. Gaps in our force structure have been filled by accelerating promotions and, in the case of officers, double below-the-zone consideration for promotion to major. The requirements for warrant officer packets have been relaxed to allow more junior Soldiers to apply, and the aggregate experience of squad leaders in our logistics formations has changed from 12 years (when I was a

The battalion surgeon for the 626th Brigade Support Battalion performs a pediatric exam during a cooperative medical engagement in Baghdad, Iraq. (Photo by CPT Allison Flannigan, 626th Brigade Support Battalion)



platoon leader) to barely 5 or 6 years today. This young and capable cohort of leaders is amazing, but they are constrained by a personnel system that cannot match experiences with requirements in line units.

In some BCT logistics formations, first lieutenants command companies and infantry, signal, and field artillery officers command FSCs because they are the most capable individuals available for the positions. While these decisions are not made lightly, the lives of Soldiers and mission completion are the only factors that matter. Terms like “professional development” or “branch qualification” are not considered when facing a shortage of logistics officers because they have all been herded into military transition teams (MiTTs) and away from line units. Necessity requires us to find the most capable leaders available despite the branch insignia they wear on their class A uniforms.

Experience counts in the logistics field. Captains are managed as a group, and once a first lieutenant is selected for promotion, he is held against the requirements for captains. Some captains have gone to the career course and are dubbed “senior captains,” and others have not been able to escape the vortex of deployments long enough to attend the course. This has had an extraordinary effect on senior NCOs, who end up training young leaders for a year before the officers are forced to move on to the next position. The fact that we have captains serving as company executive officers should not be a surprise. Few options exist for this generation of officers; if they go to the advanced course, they will either deploy again or end up on a MiTT.

I remember having to interview for command, waiting eagerly in my staff job for months before finally being deemed worthy. I was in command for a mere 18 months, and an NTC rotation was the highlight of my experience. I took command in my sixth year in the Army after holding three platoon leader positions. We must be aware of the generation gap forming between the incumbent leaders and those who will soon become battalion executive officers, support operations officers, company first sergeants, and battle staff NCOs. They have known only combat and operational deployments. This generation of officers and NCOs has had its moral fiber tempered in fire and not in the discipline of drill and command inspections.

Operational experience is supplanting a deep understanding of regulatory guidance. This and a lack of relevant doctrine makes officers of my generation stand to become relics of a bygone era. We run the risk of becoming irrelevant to a generation of leaders who know how to get things done in combat. The rote of military procedures and rigid regulatory practice

has given way to “pit crew maintenance” and “locker room” troop-leading procedures.

Many challenges face our logistics formations on the battlefields of Iraq and Afghanistan. Many more await us in the fields of training, doctrine, and materiel readiness. The need to speak in plain language about the challenges facing our modular capability will have impacts well beyond the tactical realm of the brigade. If we are not able to frame the problem in terms that our young leaders understand, we will lose our credibility and their trust. The decision to make BCTs the centerpiece of our warfighting capability has created the need to transcend the limitations of our strategic manning and equipping systems.

How should BSBs be employed? What are the proper support and command relationships with maneuver battalions? How do logistics units above BCT level provide responsive support when no habitual relationship exists with the supported division or BCT? These and many more doctrinal issues require answers to fully realize the capability of a modular logistics organization.

Finally, what we do is about people. The next generation of logistics Soldiers and leaders is taking shape and being formed by their experiences in this current conflict. How are we going to carve out space and time for them to learn to support operations at the high end of the full spectrum of conflict? How will we be able to meet their personal and professional needs for development? How can we develop competent leaders who will continue to see solutions in the hazy mist that surrounds the future of the Army and its forces?

Our modular design needs to keep pace through vibrant doctrine and strategic and institutional systems that will meet the demands of tactical units. If we are not able to grapple with the massive issues we face in our strategic and doctrinal bases, the future will take shape with no intention. The boom you hear over the horizon is not necessarily the sound of artillery; it may be the hollow sound of an Army marching into the future.

ALOG

LIEUTENANT COLONEL MATTHEW D. REDDING IS THE COMMANDER OF THE 626TH BRIGADE SUPPORT BATTALION, 3D BRIGADE COMBAT TEAM, 101ST AIRBORNE DIVISION (AIR ASSAULT). HE HAS A B.A. DEGREE FROM ST. LAWRENCE UNIVERSITY AND AN M.S. DEGREE FROM THE UNIVERSITY OF MARYLAND. HE IS A GRADUATE OF THE ARMY COMMAND AND GENERAL STAFF COLLEGE AND THE JOINT FORCES STAFF COLLEGE.

Finding a Solution for Tomorrow's Property Book Officer

BY CHIEF WARRANT OFFICER (W-4) JOEL LOCKHART

As the newest member of the Global Combat Support System-Army (GCSS-Army) team, I am slowly learning about enterprise resource planning (ERP) solutions and SAP [a German business software company] and its Defense Forces and Public Security (DFPS) industry solution. After attending DFPS training provided by SAP in Washington, D.C., I have a better appreciation of what DFPS can do to meet the Army's demanding property accountability requirements. DFPS will help the Army revolutionize its current logistics systems and property accountability business processes and, more importantly, meet the growing demands of its property book officers (PBOs).

GCSS-Army and DFPS

GCSS-Army, which is an automated logistics system designed to reengineer outdated logistics Standard Army Management Information Systems (STAMISs), uses DFPS (along with SAP's ERP Central Component 6.0) in its ERP solution. DFPS provides integrated logistics and resource management for armed forces, agencies, nongovernmental organizations, police departments, and fire departments.

Using DFPS in its ERP solution, GCSS-Army will help PBOs to better manage Army equipment, materiel, and resources by sharing real-time data with commanders and maintainers and allowing them all to view the same information. Commanders, PBOs, and maintainers will have the ability to better manage unit equipment, Army Force Generation support, warehouse operations, in-transit materiel tracking, materiel procurement forecasts and planning, and maintenance actions. GCSS-Army will also modernize supply support activities (SSAs), fully integrate ammunition management into the logistics fight, and integrate Department of Defense financial tracking requirements.

GCSS-Army Instead of PBUSE

When comparing GCSS-Army to the Property Book Unit Supply Enhanced (PBUSE) system, more similarities than differences exist. For one thing, GCSS-Army's organizational structure is similar to the unit task organization in PBUSE. Like PBUSE, GCSS-Army's structure is based on a modification table of organization and equipment (MTOE) or a table of distribution and allowances (TDA). GCSS-Army downloads MTOE and TDA authorizations for personnel and equipment directly from the Army Force Management Support

Agency. All GCSS-Army transactions are based on DFPS force elements, which are Army-authorized unit identification codes (UICs). PBUSE uses UICs for a similar purpose. Both systems have comparable user roles and permissions and are Internet based and available through unclassified channels.

But GCSS-Army has improvements over PBUSE. GCSS-Army shares integrated data with organizations and personnel throughout the logistics enterprise, including SSA accountable officers, PBOs, maintainers, and commanders. The organizational structure in GCSS-Army is based on more detailed information from all the way down to the MTOE's paragraph level. Using GCSS-Army instead of PBUSE eliminates the need for reconciliations in the retail supply arena and allows PBOs to select candidates for serviceable lateral transfers within the system. GCSS-Army also shows the maintenance status of equipment and provides advanced shipping notices and expected delivery dates.

For most PBOs, migrating to GCSS-Army will be like transitioning from checkbooks to online banking. Many will likely resist it initially, but others will immediately embrace it. Some will learn to use a combination of both the old and new ways, and others will expand on the new capability in the same way that some banking customers use online bill paying, debit cards, and mobile technology to exploit the effectiveness of their online banking capabilities.

By harnessing SAP's DFPS in its ERP solution, GCSS-Army has the potential to provide greater flexibility, enhanced readiness oversight, and real-time property accountability to Army logisticians, commanders, and Soldiers, whether deployed or in garrison. However, to achieve GCSS-Army's full potential, PBOs must be willing to reengineer old business processes and embrace new integrated methods of accomplishing the logistics mission. I strongly encourage PBOs to take advantage of opportunities to learn more about DFPS, SAP, and GCSS-Army.

ALOG

CHIEF WARRANT OFFICER (W-4) JOEL LOCKHART IS A SENIOR SUPPLY TECHNICIAN AT THE ARMY COMBINED ARMS SUPPORT COMMAND, WHERE HE WORKS WITH THE PROJECT MANAGER, GLOBAL COMBAT SUPPORT SYSTEM-ARMY. HE GRADUATED CUM LAUDE WITH A B.S. DEGREE FROM EXCELSIOR COLLEGE AND IS A GRADUATE OF THE WARRANT OFFICER BASIC, ADVANCED, STAFF, AND SENIOR STAFF COURSES.

Army Logistics Knowledge Management and SALE: Relevance and Recommendations

BY DR. NICHOLAS J. ANDERSON

This article, the third of a three-part series on Army logistics knowledge management and the Single Army Logistics Enterprise, discusses the relevance of SALE to Army logistics KM and recommends a logistics KM framework for the Army.

This article covers three areas: the implementation of the Single Army Logistics Enterprise (SALE), the alignment of SALE with Army logistics knowledge management (KM) practices and the relationship between the two, and recommendations for a logistics KM framework for the Army logistics community.

For this research, the author reviewed related studies and conducted face-to-face interviews with Army acquisition, information technology (IT), and logistics representatives who have been involved with directing, implementing, using, testing, and evaluating SALE. While the research was being conducted, the Army had not completed implementing SALE. The Army had partially fielded the Logistics Modernization Program (LMP) component only to Army Materiel Command (AMC) organizations and was testing and evaluating the Global Combat Support System-Army (Field/Tactical) (GCSS-Army [F/T]) component of SALE. Therefore, the author limited the interviews to a sample of personnel from organizations involved with implementing the LMP component, testing and evaluating the GCSS-Army (F/T) component, and providing guidance and direction for SALE.

The author interviewed representatives from the Office of the Deputy Chief of Staff, G-4, Department of the Army; Program Executive Office Enterprise Integration System; AMC; the Army Combined Arms Support Command (CASCOM); Tobyhanna Army Depot, Pennsylvania; and the Army TACOM Life Cycle Management Command (LCMC). The participants served as members of the SALE implementation team.

The Army G-4, AMC, and CASCOM representatives provided logistics guidance to the

implementation team. The Program Manager (PM) SALE representatives focused on the acquisition and IT aspects of the LMP implementation efforts and the testing and evaluation of SALE's GCSS-Army (F/T) component. The Tobyhanna Army Depot and LCMC representatives provided feedback to the implementation team from the perspective of LMP users.

Implementing SALE

The relevance of SALE to Army logistics KM depends on establishing logistics KM practices and successful SALE implementation themes. The chart at right shows the alignment of SALE implementation themes with KM practices. Direction and funds are SALE's top management support themes affecting logistics KM. Senior executives play active roles in the SALE implementation, and Department of Defense and Army directives cover SALE. The Army has programmed funds for procuring logistics information systems that will plug into the SALE architecture.

SALE's project management themes include governance, sequential rollouts, logistics process management, and communication. The project management team conducts reviews to keep the project on schedule and ensures that SALE addresses logistics processes for warfighting requirements. Members of the project management team communicate with each other to stay synchronized.

The strategic goal themes from the interviews pertain to SALE and its interface with transportation automated information systems. SALE provides software solutions for integrating all logistics data except transportation information.

This chart shows how implementation of the Single Army Logistics Enterprise aligns with logistics knowledge management practices.

However, the fiscal year 2007 Army Logistics Domain Information Technology Implementation Plan includes SALE and shows interfaces with transportation automated information systems.

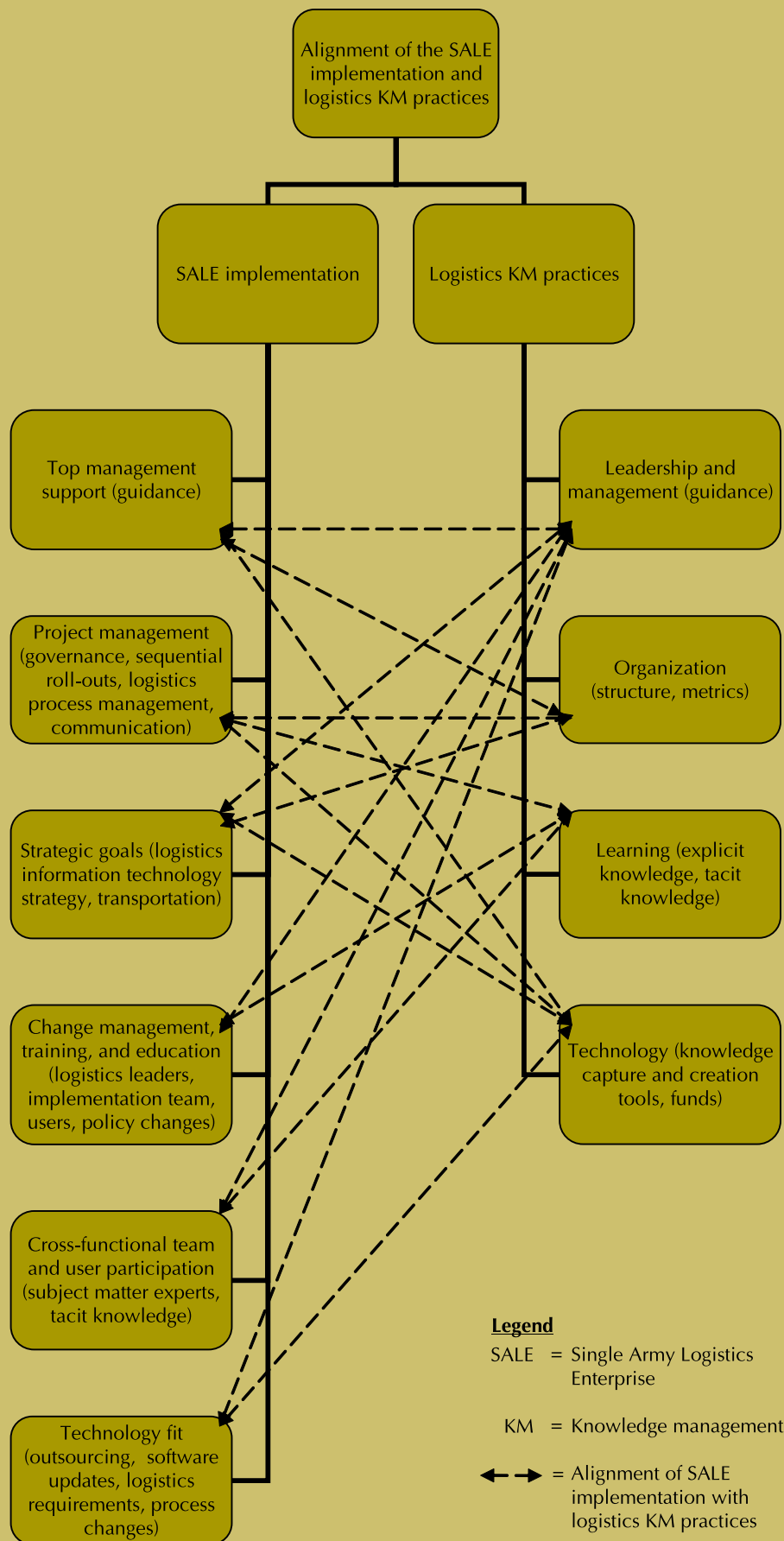
SALE's implementation change management and training and education themes include enterprise resource planning (ERP) training and education for logistics leaders, implementation team members, and users and policy changes. The training and education programs should help organizations overcome resistance to change. Logistics organizations should focus on specific SALE training and education requirements instead of attempting to train and educate people on all aspects of SALE components. The quality of training and education could affect the quality of data and information from SALE. The use of SALE components should be intuitive to users, and logistics organizations should adjust policies to support SALE.

The cross-functional team and user participation themes pertain to subject-matter experts and tacit knowledge. The cross-functional team concept worked for the LMP component of SALE when subject-matter experts shared knowledge with implementation team members. The Army had not yet fielded the GCSS-Army (F/T) component to institutional and operational forces at the time of the research.

The technology fit themes include outsourcing ERP development and implementation, software updates, logistics requirements, and logistics process changes. The Army sought an ERP solution to satisfy its logistics systems integration challenges. A commercial off-the-shelf (COTS) solution appeared to be the best approach. The Army contracted SAP, a European software company, to provide the software integration solution. This contract eliminated the need for the Army to custom-build its logistics enterprise system.

Logistics KM and SALE

SALE aligns with Army logistics KM. KM is one of the key components of the Army logistics enterprise. SALE's vision includes "a fully integrated logistics enterprise based upon collaborative planning, knowledge management, and best business practices."¹ The following sec-



tions explain the alignment between the KM practices of leadership and management, organization, learning, and technology and the SALE implementation.

Leadership and management. Top management support, strategic goals, change management and training and education, cross-functional team and user participation, and technology fit align with the logistics leadership and management KM practice. The Army G-4, AMC, and CASCOT provide guidance and direction to the SALE implementation team. The direction and guidance include the logistics IT strategy, policy changes, composition of SALE implementation teams, and logistics requirements.

Organization. Top management support, project management, and strategic goals of SALE align with the logistics organization KM practice. The governing body, called the Business Process Council, oversees the implementation efforts. The council has established metrics to help monitor SALE implementation efforts. The SALE implementation plan includes sequential rollouts and periodic reviews. The sequential rollouts comply with guidance in the Army logistics IT strategy. Although SALE does not cover transportation automated information systems, it provides interfaces for them.

Learning. Project management, change management and training and education, and cross-functional team and user participation align with the logistics learning KM practice. The organizations participating in the implementation of SALE have recognized and implemented change management to help employees overcome resistance to new ways of doing things. SALE has introduced changes to processes for obtaining logistics data and information in organizations, and the logistics training and education programs will be updated to institutionalize changes required by the implementation of SALE. Cross-functional implementation teams, consisting of acquisition, IT, and logistics personnel, help facilitate the transformation of tacit knowledge into explicit knowledge.

Technology. Top management support, project management, strategic goals, and technology fit align with the logistics technology KM practice. The Army provides guidance and funds for the SALE implementation program. The Business Process Council monitors the acquisition process to ensure that the components of SALE satisfy the needs of the Army. The Army has prepared the logistics IT strategy to help align IT procurements with the strategic goals of the logistics community. The Army has decided to outsource software solutions, including KM capture and creation tools, for SALE.

Recommendations

SALE offers the Army logistics community technological enablers for operating in a web-based collaborative environment. Logisticians could become overwhelmed with logistics data and information from SALE unless they have a structure for dealing with them. KM provides this structure. Although the Army logistics community has not institutionalized its approach to KM, the results from this research suggest ways of dealing with KM while receiving waves of data and information from SALE.

The strategies, policies and regulations, institutional training and education, and operations drivers suggested in the first article of this series could help the Army institutionalize logistics KM. These KM drivers serve as the first step toward identifying logistics KM requirements and their relationships to KM practices with SALE. The next step should be the institutionalization of logistics KM practices. The leadership and management, organization, learning, and technology KM practices could assist the logistics community in this regard. The third and final step is aligning SALE with logistics KM practices.

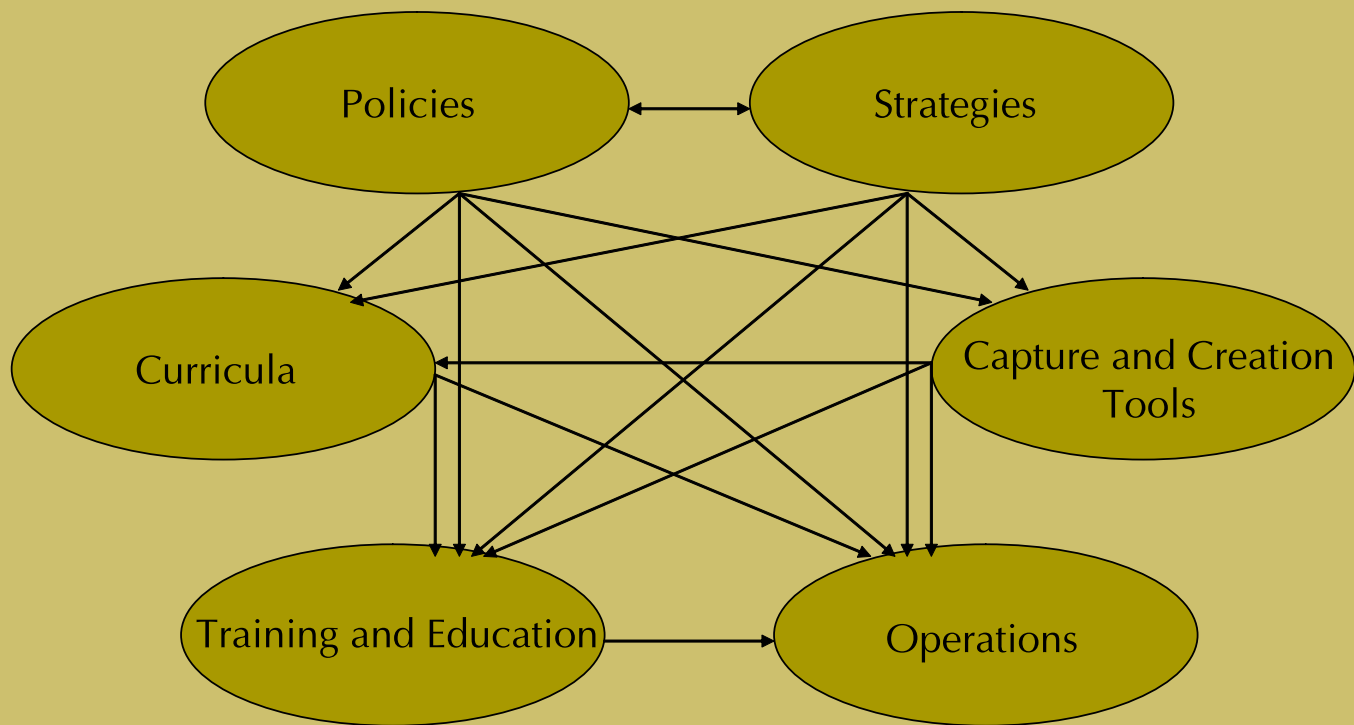
Although the implementation of SALE aligns with logistics KM, the Army needs a logistics KM framework to help manage data and information from SALE. The results of this research identified six key factors that are critical to effective Army logistics KM: policies, strategies, curriculum development, training and education programs, capture and creation tools, and operational concepts.

Policies and strategies should lead the KM effort. Policies strongly affect strategies. However, strategies can also require the need for new policies or revisions to existing strategies. Policies and strategies affect curriculum development, training and education, capture and creation tools, and operations.

The curriculum development effort and KM capture and creation tools affect KM training and education and KM operations. Curriculum development includes faculty preparation and recruitment, facility resources, and course and lesson objectives for logistics KM training and education programs. KM training and education programs help logisticians manage data and information at all levels of operations. Curriculum development should cover KM capture and creation tools because they serve as enablers to help logisticians make decisions during KM operations. KM policies, strategies, curriculum development, training and education, and capture and creation tools provide a framework to help logisticians manage data

¹ "Single Army Logistics Enterprise: Overall Army Logistics Enterprise Solution Report—Final," Enterprise Integration, Inc., Fairfax, Virginia, 2003.

Key Factors of Effective Knowledge Management



This chart illustrates key knowledge management requirements and practices discovered through the author's research.

and information at the strategic, operational, and tactical levels of operations.

KM policies. The Army logistics community needs defined policies—established by the Army G-4—to guide logistics KM efforts. Without logistics KM policies, logisticians follow ad hoc approaches to identifying, collecting, sharing, and using logistics data and information. An Army logistics KM policy could provide KM guidance specifically for the logistics community. This research suggests the inclusion of KM policies on leadership and management, organization, learning, and technology practices for the Army logistics community.

KM strategies. The Army G-4 should also develop logistics KM strategies. The strategy insights (vision, objective, strategy development, strategy execution, and corrective actions) outlined in the book *Crafting and Executing Strategy*² could assist the G-4 with logistics KM strategy development. The G-4 should identify logistics KM goals and objectives. The

strategies should also include metrics to measure the effectiveness of their execution. This research confirmed that continuing top management involvement and commitment are critical to logistics KM.

KM curriculum development. The Army should develop curricula to guide training and education programs for managing logistics data and information. Present logistics curricula do not refer to the management of logistics data and information as knowledge management. The Army has not created logistics KM titles for what it trains and educates and should update logistics curricula to reflect logistics KM practices.

KM training and education. Following the development of relevant curricula, the Army needs to plan, fund, and execute extensive logistics KM training and education programs. These programs should operate continuously to maintain and progressively expand Army KM capabilities. Logisticians should be able to apply logistics IT enablers to help manage supply, maintenance, transportation, and other logistics data

² Arthur A. Thompson, Jr. et al., *Crafting and Executing Strategy: The Quest for Competitive Advantage Concepts and Cases*, 14th ed., McGraw-Hill/Irwin, New York, 2005, pp. 17–39.

and information. This includes components of SALE as well as automated information systems that interface with SALE. SALE and interfacing automated information systems could provide a flood of data and information that could overwhelm logisticians. The Army should train and educate logisticians on managing data and information from these systems.

KM capture and creation tools. The Army logistics community needs to identify the KM capture and creation tools needed to assist with operations planning and execution. Since SALE and its interfacing automated information systems provide an enormous stream of data and information, logisticians need KM tools to process them.

To minimize the need for costly interface solutions, as many of the requisite KM tools as possible should be part of the purchased SAP software solution. For exceptional cases, service-oriented architecture (SOA) solutions could satisfy KM tool requirements for SALE. Several IT software companies offer SOA solutions. The Army logistics community should agree on KM capture and creation tool requirements as soon as possible. The longer it takes, the greater will be the probability of relying on costly SOA interface solutions. When SAP updates its software, the Army must update the customized KM tools so they can interface with SAP.

These capture and creation tools are critical to an effective interface between SAP, SALE, and unique and varied Army logistics requirements. Private industry often uses third-party software for interface purposes. The Army needs to determine if SAP has the required capabilities for Army logistics KM practices and, if not, to consider using internally developed software or COTS software.

KM operations. The Army should gear all logistics KM efforts in support of logistics operations at the strategic, operational, and tactical levels. KM policies, strategies, curriculum development, training and education programs, and capture and creation tools should support logistics operations at these levels. Regardless of the operational concept (war or operations other than war), logisticians must manage data and information at all three levels.

Future Research

The Army has entered into contracts with SAP to implement components of SALE. However, questions arise concerning web-based data integration software and its ability to stay secure and current, especially when considering how fast technology changes. Intel cofounder Gordon Moore predicted in 1965 that the number of transistors on a computer chip would double about every 2 years.³ Moore's prediction has been very close to the actual evolution of technology over the past 40 years.

The Army should conduct future research on the security of web-based data integration software. SALE provides an architecture that could integrate and interface logistics data and information using software developed from all parts of the world. Future research should determine if this could be a problem for the Army. The Army should resolve these issues before committing fully to SAP or other software alternatives.

Several organizations will be sending and receiving data and information throughout the logistics enterprise. Future research should include studying command and control over data and information because organizations could doubt the veracity of data and information from such an open system. The Army should hold organizations and people accountable for the accuracy of data and information shared under the SALE umbrella.

The Army should also research KM requirements, KM practices, and logistics data integration efforts from the wars in Iraq and Afghanistan. This effort should include all of the logistics functions. Logisticians should understand explicit and tacit knowledge challenges created by the war. The insights from the war could help focus the efforts of the SALE implementation team to address logistics KM.

While the research was limited to Army organizations, little was found that was particularly unique to the Army. The conclusions appear relevant to other defense organizations as well as to KM efforts in the private sector. Future research should be conducted to confirm this.

Technology has revolutionized Army logistics. Current SALE implementation efforts support Army logistics knowledge management. However, the Army logistics community does not rely solely on SALE software solutions. Army logisticians need a KM policy, a KM strategy, updated logistics training and education curricula, logistics automated information system training and education programs, and KM capture and creation tools to leverage the benefits of software solutions to support collecting, sharing, and using logistics data and information. **ALOG**

DR. NICHOLAS J. ANDERSON IS THE PRESIDENT OF O&M CONSULTING, LLC, IN GOOSE CREEK, SOUTH CAROLINA. HE IS A RETIRED ARMY COLONEL AND A GRADUATE OF SOUTH CAROLINA STATE UNIVERSITY. HE HAS A DOCTOR OF PHILOSOPHY DEGREE IN ORGANIZATION AND MANAGEMENT FROM CAPELLA UNIVERSITY, A MASTER'S DEGREE IN MANAGEMENT FROM WEBSTER UNIVERSITY, AND A MASTER'S DEGREE IN STRATEGIC STUDIES FROM THE ARMY WAR COLLEGE.

³ "Moore's law," Intel, 2007, <http://www.intel.com/technology/mooreslaw/index.htm?iid=tech_as+rhc_moore>, accessed on 2 August 2007.

Post Production Software Support

BY MARC W. GUTLEBER

Post production software support provides logistics support for maintaining and further developing the operational capability of Army systems. But what is post production software support, and how does it affect the cost of operating the systems?

Radar, satellite terminals, tactical communications, intelligence systems, sensors, position location, battle command systems, logistics information, and decision support systems—a quick look at military systems, both on the battlefield and supporting the warfighter, reveals that they nearly all require software to operate. The “net-centric” migration to integrating and sharing data and information among systems (across tactical, strategic, and information systems) increases the criticality of maintaining the operational software for these systems. With the ever-increasing criticality of maintaining software for the operational sustainment of systems, it is important that logisticians understand the elements and drivers of software support. This article presents the basic factors that influence software support and why its costs will increase in the future.

What is PPSS?

A system’s software is sustained through post production software support (PPSS), which encompasses all software activities required to ensure that fielded systems that are out of production continue to support their operational mission. Although simple in concept, PPSS encompasses a host of activities, including maintaining operational capabilities by correcting defects discovered in the field, ensuring compliance with information assurance requirements, adjusting software driven by changes in commercial off-the-shelf (COTS) releases, assisting users in the field, ensuring compliance with Department of Defense (DOD) and Department of the Army directives and policies (such as software blocking), and improving software maintainability and reliability. The effort associated with these activities is affected by a number of variables, such as the size of the software program, type of software applied, changes required, and complexity of the software in the systems.

In general, software size, changes required, and complexity are easily explained at the macrolevel.

Software size. The size of the program is generally counted as the lines of code (LOC). Using LOC has its roots in early programming, when each line of code generally contained a command for the software. The more complex the program, the more lines required to perform the function, and therefore the larger the number of lines. At a simplistic level, this holds true today, and the LOC often continues to be a measure of the size of the program—the more lines, the more effort required to maintain it.

Changes required. This refers to what must be adjusted, updated, and so forth in a given period of time (usually a year). It is viewed as a subset of the LOC by actual numbers (LOC required changes) or as a percentage of the lines of code (x-percent of LOC has to be changed). Changes to those LOC must be accomplished using PPSS.

Complexity. This is a measure of the intricacy associated with a program. Increases in complexity are easily understood at the macrolevel but difficult to quantify. Complexity is generally accepted as the number of control paths and interfaces associated with the software. Control paths are the different branches the program potentially has, which are driven by subroutines and operands, such as if/then and calculation-driven subroutines. Interfaces are the points at which the program sends and receives information to and from external programs. As the Army moves to programs sharing more and more information across the “WARNET,” these interfaces will continue to increase. Although a doctoral dissertation could be developed on the details associated with measuring complexity, this basic definition will be used for this article.

Advantages of COTS

One of the acquisition initiatives implemented by the Army and DOD in the 1990s is having an ever-increasing effect on PPSS—the use of COTS software products. The benefits of applying COTS products include decreased development efforts (resulting in reduced development costs) and faster procurement (putting systems into the

hands of the warfighter faster). Systems being used by our Soldiers today could still be on the drawing board if it were not for the use of COTS software. This shift in emphasis (from proprietary DOD software on a system to COTS) exploded in the late 1990s and is still prevalent today. COTS procurements have grown in breadth and depth across the entire defense establishment. In the PPSS world, application of COTS is bringing additional requirements associated with maintaining software—primarily license costs, security updates, and certification and accreditation.

Additional Costs of COTS Systems

Before the Army started using COTS software, it generally owned the software when the product was procured, including the source code. Any changes to the software were controlled, driven, and managed by the Army. If no changes were made to the software, there were no costs to maintain the software after its purchase. However, a COTS product generally brings with it a logistics tail associated with purchasing future licenses and integrating updates driven by the commercial vendor. Since the Army no longer owns the software, the Army is wed to the vendor as long as the COTS software is used.

The Army Communications-Electronics Command Software Engineering Center (SEC) is responsible for maintaining command, control, communications, computer, intelligence, sensors, and reconnaissance (C4ISR) systems in PPSS, and the impact of COTS licenses on those requirements is profound. In building the program objective memorandum (POM) for fiscal years (FYs) 2010 to 2015, these licensing costs are estimated to increase to about \$100 million in FY 2010 (including installation and management) and to \$140 million by FY 2015 (excluding some additional license costs associated with software blocking). Some of these costs are driven by new systems entering PPSS, including PPSS license costs associated with the Distributed Common Ground System-Army (DCGS-A).

In addition to software licenses, COTS brings a logistics cost associated with security. Since most PPSS systems are not stand alone, information and data are passed among systems over tactical and strategic communications systems and the Global Information Grid. Maintaining information assurance on these systems is critical and is accomplished through the information assurance vulnerability alert (IAVA) process, in which software is updated by the vendor to maintain data integrity. This is best illustrated by the various releases of Microsoft to correct vulnerabilities in its software. Hackers and attackers often choose Microsoft because of its sheer size. Therefore, all Microsoft users are vulnerable to the flaws discovered by these hackers and attackers. Because of this, systems and computers with heavy use of Microsoft

With the growth in software complexity driven by both individual system software complexity and the effect of more systems sharing data across systems, most systems software requires some modification or updates every year.

products generally apply patches as soon as possible to avoid information and operations vulnerabilities.

This same process is required of COTS products in PPSS systems. Efforts associated with IAVAs do not end with the installation of the patch. The system must be tested to ensure that the patch has no secondary effects on the operation of the system. This certification and accreditation process is performed on software after modifications are made and is required to be performed on weapon system software before it is released. DOD and the Department of the Army have rules and regulations associated with the certification and accreditation process that result in the system's approval to operate on DOD networks.

Identifying PPSS Requirements

The factors discussed above affect the effort needed to maintain software at the system level. The overall process of building requirements across all systems is applied in developing the POM requirements for PPSS. In developing PPSS requirements, SEC groups requirements into three general areas as follows: senior leader directed (SLD), near-term readiness (NTR), and industrial base (IB).

For PPSS, SLD requirements are primarily “software blocking.” These efforts fund battle command software from a system-of-systems viewpoint to ensure that command and control and associated systems feeding data are upgraded across the board to maintain proper battle command. In the POM, SLD requirements are estimated to increase from \$140 million in FY 2010 to \$210 million in FY 2015.

PPSS NTR requirements are made up of four distinct pieces: license costs, IAVAs, certification and accreditation, and field software engineers (FSE). FSEs are the software engineers in the field providing critical support to maintain the operational capabilities of systems. They perform software fixes, debug, identify and isolate problems, assist in software release installation, make emergency corrections, and so forth. Failure to fund NTR requirements results in inoperable systems (no licenses to run systems), loss of authority to operate, elimination of technical support, and loss of

systems security (which places warfighters at risk of malicious network attacks). The cost to operate NTR can almost be viewed as a funding “floor” in that, if not funded, systems must basically be shut down. In the POM, NTR requirements are estimated to increase from \$210 million in FY 2010 to \$316 million in FY 2015 (including those NTR costs associated with DCGS—A less some licenses in software blocking).

PPSS IB requirements are efforts to fix software problems discovered during use, updates to interfaces with other systems, and upgrades required to maintain operational capabilities (for example, updating threat information for sensor or analysis systems to ensure that the latest threat information is used by the system). In general, the drivers of IB requirements are software size, changes required, and complexity. Over time, the sheer size of software programs supporting a system tends to increase in size. Although, in itself, the size of a program does not drive the sustainment effort (for example, a large program may require minimal changes in proportion to its size), the effort to sustain a large program (the knowledge base required to understand the whole) does affect PPSS efforts.

With the growth in software complexity driven by both individual system software complexity and the effect of more systems sharing data across systems, most systems software requires some modification or updates every

year. Increases in complexity are key variables in determining PPSS industrial base requirements. Taken collectively, the variables of software size, changes required, and complexity drive the IB requirements for PPSS.

Software is critical to ensuring the operational capabilities of today’s and tomorrow’s Soldier. Maintaining software is accomplished through PPSS requirements, which are built from three basic categories: SLD, NTR, and IB. The application of COTS products has provided our Soldiers with systems and capabilities that otherwise would have taken longer and cost more to develop. However, long-term PPSS comes with its own costs. Over the POM, PPSS-based requirements for SEC-supported systems total over \$500 million in FY 2010 and increase to over \$700 million in FY 2015, driven by factors such as the logistics costs associated with COTS products, the increased complexity and size of software in a system, and new systems entering PPSS. PPSS requirements must be funded to maintain the capabilities of systems required by our Soldiers in the field.

ALOG

MARC W. GUTLEBER IS A PROGRAM ANALYST WITH THE ARMY COMMUNICATIONS-ELECTRONICS COMMAND SOFTWARE ENGINEERING CENTER.

LOG NOTES

Centralized Repairs Reduce Soldier Readiness

There has been a trend toward centralizing the organizational maintenance of Reserve component (RC) equipment. This concept eases one of the many burdens imposed on unit commanders and allows them to concentrate on mission-essential task list training.

My concern is that operators and crew members will not know how to maintain their equipment properly if organizational-level maintenance is performed by an external activity.

I experienced this situation during Operations Desert Shield and Desert Storm when some Soldiers in mobilizing RC units were unable to perform organizational maintenance on their equipment. This was because those tasks were performed at the maneuver

area training equipment site (MATES) and equipment concentration site (ECS) during nonmobilization periods. This presented a problem when MATES and ECS personnel were not part of the mobilizing unit.

We had to institute organizational maintenance training for these units, which became an additional requirement imposed on them in the limited time available at the mobilization site.

Centralized organizational maintenance reduces some of the readiness problems facing the RC. However, this does not relieve a commander of the responsibility of training Soldiers to perform organizational maintenance on their equipment.

**LTC JAMES T. DELISI
USA (RET.)**

R&R: Reading and Reviews

Lean Six Sigma Logistics: Strategic Development to Operational Success. Thomas Goldsby and Robert Martichenko, J. Ross Publishing, Boca Raton, Florida, 2005, 282 pages.

The Department of Defense's (DOD's) use of the latest management practices from industry to improve business operations has had mixed results over the years. Some of those techniques include benchmarking, business process reengineering, meeting Malcolm Baldrige National Quality Award criteria, using Balanced Scorecards, Total Quality Management, life-cycle management, Business Enterprise Architecture, Enterprise Resource Planning, Statistical Process Control, ISO [International Organization for Standardization] 9000, other assorted programs dating back to the 1960s, and the introduction of the Planning, Programming, Budgeting, and Execution System. Not all have delivered on their promises of cost-effective warfighter support. Operating tempo, rising costs, and the status of the national economy drive the urgent search for solutions.

Lean Six Sigma (LSS) is another candidate for solving the joint challenges of improving speed and quality throughout the production process. It fuses two management strategies, Lean and Six Sigma, to provide a vision for truly transformational improvements. Lean traces its heritage to the Toyota production system and features a relentless pursuit of eliminating waste and tying customer requirements directly to the design and production systems to improve system throughputs. Six Sigma comes from statistics-based, data-driven principles aimed at reducing variation and improving quality through process control. The fusion of these two strategies has been used throughout DOD with remarkable results.

The Army reports savings of nearly \$2 billion on over 2,500 projects since implementing LSS in 2005. The Letterkenny Army Depot case study on LSS (available at <http://www.amc.army.mil/lean>) is worthy of professional study. The other services' claims for LSS efficacy are no less remarkable. The combined experiences of DOD agencies, services, and civilian businesses are compelling reasons for professional logisticians to have a working knowledge of LSS.

The authors of *Lean Six Sigma Logistics: Strategic Development to Operational Success* are well-qualified to write an LSS practitioner's guide. Dr. Thomas Goldsby is an associate professor of supply chain management at the University of Kentucky. He has written extensively in highly regarded, peer-reviewed professional and academic journals and sits on the editorial review board of the *International Journal of Logistics*

Management. Robert Martichenko is an experienced practicing logistician and an active Lean instructor who sits on the editorial advisory board of *Logistics Quarterly* magazine.

The book's central argument is that LSS provides all the tools needed to reduce waste, find and create value, manage the supply chain, and delight customers. Aimed at practicing logisticians, its well-grounded theoretical insights are complemented by the wisdom of experience. The authors consider planning, preparation, and execution concepts from the strategic to the tactical levels and make the case for logistics as a core competency integral to all operations.

The book's added value is the mapping of LSS concepts to the practice of logistics. Using the metaphor of the "Logistics Bridge," it maps out the integration of LSS into life-cycle operations to address total logistics costs and waste reduction.

After a quick overview of LSS, the book dives deeply into a taxonomy of waste in its various forms. The Logistics Bridge model unfolds in terms of the flows of assets, information, and money; the capabilities of predictability, stability, and visibility; and the disciplines of collaboration, systems optimization, and waste elimination. The authors describe the application of the full suite of LSS tools to the logistics model. The discussions of the limits of LSS and science are framed by a modern understanding of complexity and systems dynamics. The book concludes with a 20-page case study that is fully documented with the kinds of messy narratives and data collections that managers would reasonably address while transforming their business operations. The book also is extensively supplemented through the Internet with free, downloadable materials from www.jrosspub.com.

Lean Six Sigma Logistics: Strategic Development to Operational Success is written in clear, powerful prose with a tone of quiet, professional authority. In addition to using the book to provide extensive support to industry, the authors have used it as a guiding text for training workshops conducted with several Air Mobility Command units, including squadrons at Andrews Air Force Base, Maryland; Scott Air Force Base, Illinois; McChord Air Force Base, Washington; Elmendorf Air Force Base, Alaska; Andersen Air Force Base, Guam; Yokota Air Base, Japan; and Ramstein Air Base, Germany. Airmen and officers from several other squadrons participated in these workshops between 2006 and 2008. The core principles and tools of the book have found success in the noncommercial, highly structured environment associated with military support of the warfighter.

I am impressed with the quality and utility of this book and recommend it to logisticians looking for ways to plan for and apply LSS in their organizations. Of the 20 or so LSS titles in my library, this is my favorite practitioner's guide—especially for its focus on logisticians' challenges.

KEN LONG IS AN ASSISTANT PROFESSOR OF LOGISTICS AND RESOURCE OPERATIONS AT THE ARMY COMMAND AND GENERAL STAFF COLLEGE AT FORT LEAVENWORTH, KANSAS.

The Supply for Tomorrow Must Not Fail: The Civil War of Captain Simon Perkins, Jr., a Union Quartermaster. Lenette S. Taylor, Kent State University Press, Kent, Ohio, 2004, 264 pages.

Detailed studies of logisticians are greatly under-represented in the huge body of Civil War literature. There are several reasons for this, but the main reason is the lack of primary source material. The War Department destroyed records after post-war audits were completed, and quartermaster officers' families, who saw no use in retaining the information after their deaths, destroyed their personal records.

In her first book, author Lenette Taylor has discovered a historian's long-lost treasure chest and displays its rich contents. While her treasure did come in chests (eight crates from the Civil War, to be exact), those chests did not contain gold or silver. They contained 20,000 documents, many tied together with their original "government red tape." This trove of papers contained copies of the financial and property reports and personal correspondence belonging to Captain Simon Perkins, Jr., a Union quartermaster officer with the Department of the Mississippi from February 1862 to July 1864.

Using Perkins's documents, along with other primary archival and secondary sources, Taylor has provided readers with a complete record of the experiences and trials of a Union quartermaster officer in the Civil War.

Just as Major General William T. Sherman famously coined the phrase "War is Hell," Brigadier General Montgomery Meigs, Union Quartermaster General, could have uttered as convincingly that "War is Business" because of the vast supply undertaking the conflict required.

The logistics organizations supporting the Union Army and the duties and responsibilities of Captain Perkins would be familiar to today's multifunctional logistician. Perkins was one of fewer than 1,500 Federal quartermaster officers serving under Meigs and carrying out a highly diverse set of responsibilities in mobilizing, equipping, and sustaining the field armies of the Union across all theaters.

Though Perkins only saw combat for 90 days early in the war as a private in an Ohio volunteer regiment,

he was as dedicated as any patriot serving in an infantry unit. In order to sustain Army units, he labored daily against the weather, shortages of manpower and transportation, and the accusations of fellow officers that he had shorted or cheated them on supplies (when the accusers may have been guilty of a "midnight requisition" days earlier).

Perkins's first quartermaster assignment was at the Nashville, Tennessee, main supply depot of Major General Don Carlos Buell's Army of the Ohio in February 1862. Colonel Thomas Swords, Chief Quartermaster of the Department of the Ohio and the Department of the Cumberland (which today would be the equivalent of a commanding officer in a theater sustainment command) made Perkins the forage and fuel officer for the Nashville Depot. In this position at the age of 23, Perkins was responsible for receiving, storing, issuing, and accounting for millions of pounds of animal forage and coal on a monthly basis.

Readers who hold no logistics or business acumen should be forewarned that this book does not concern itself with grand cavalry charges, artillery duels, or tactical maneuvering. For example, in describing the Union capture of Corinth, Mississippi, in May 1862, the author merely states, "With Corinth in Union hands, the military situation changed dramatically." However, for the discerning operations- or logistics-oriented reader, this book richly describes the machinery of supplying war at the strategic and operational levels from the viewpoint of an adept practitioner.

The major weakness of the book lies in its lack of meaningful illustrations. A logistician lives by maps and detail, and the lone map at the beginning of the first chapter is insufficient to accompany the excellent descriptions of supply operations provided throughout the book. Out of nearly 20 photos, only 3 specifically show some aspect of Civil War supply activities.

Photos on the front and back dust jacket of this book show Captain Perkins in 1862 and 1865, respectively, aged by war and immense responsibility. Though some of his peers were no doubt slothful at best and thieves at worst, Perkins and the majority of his quartermaster comrades "were key figures in the army's movements; their ability to furnish subsistence for the men and animals 'often shaped strategy and influenced it.'" Lenette Taylor has done a remarkable job in capturing the wartime challenges of a young quartermaster officer and returning to light Captain Simon Perkins—a figure worthy of study and an example for modern warrior-logisticians.

ALLAN S. BOYCE IS AN ASSISTANT PROFESSOR IN THE ARMY COMMAND AND GENERAL STAFF COLLEGE'S DEPARTMENT OF LOGISTICS AND RESOURCE OPERATIONS AT FORT LEAVENWORTH, KANSAS.

EXPEDITIONARY SUSTAINMENT COMMAND FIRST TO DEPLOY TO AFGHANISTAN

In late February, the 143d Sustainment Command (Expeditionary), Army Reserve, became the first expeditionary sustainment command to deploy to Afghanistan. More than 250 Soldiers from the command are providing logistics command and control and overseeing sustainment operations for Soldiers already in place and 30,000 additional troops scheduled to arrive in the theater by midsummer.

The 143d Sustainment Command (Expeditionary), based in Orlando, Florida, previously deployed to Iraq as an expeditionary sustainment command and, before its 2007 transformation, as a transportation command. The unit, originally slated for duty in Kuwait, received word of its new mission while it prepared for the Kuwait deployment.

JOINT CHIEFS OF STAFF RELEASE CAPSTONE CONCEPT FOR JOINT OPERATIONS

The joint logistics community has new guidance on how the Chairman of the Joint Chiefs of Staff (CJCS), Admiral Mike Mullen, sees the future of joint force operations. The Capstone Concept for Joint Operations (CCJO) Version 3.0, signed by the CJCS on 22 January, outlines a vision for the joint forces of 2016 to 2028.

The CCJO describes joint operations as integrating four key areas of military activity—combat, security, engagement, and relief and reconstruction. Joint force commanders will need to be able to combine two or more of these activities to accomplish operational requirements.

Among the common operating precepts that underlie all joint operations, the CCJO notes that joint force commanders must be able to envision the performance of joint functions such as logistics independently of each service's capabilities.

For the sustainment community, the CCJO explains that relief and reconstruction, in particular, can primarily become focused on logistics and engineering tasks, where the military's "most important contribution may be to assist other organizations in such areas as transportation, communications, logistics, and emergency healthcare."

The CCJO emphasizes the importance of partnerships among the services, local authorities, other U.S. Federal agencies, and nongovernmental organizations to relief and reconstruction efforts. It notes, "Military commanders must be able to tolerate a certain degree of ambiguity and inefficiency as the price of successful cross-agency collaboration." However, commanders must monitor and control joint force employment in these activities so that the combat readiness of units is not degraded.

The CJCS intends for the CCJO to "guide force development and experimentation" on a broad scale. Subordinate joint and service operating concepts will address this joint concept in further detail and apply the ideas to specific situations.

The capstone concept reinforces the recently published Army training doctrine, FM 7-0, Training for Full Spectrum Operations, by calling for the recruiting, developing, and rewarding of flexible leaders who—

- Are comfortable acting on their own authority when they have an understanding of how their actions will affect the big picture.
- Share information with subordinates, leaders, and peers.
- Give subordinates the opportunity to make as many decisions as conditions allow.
- Foster an environment that is "more tolerant of errors of commission than errors of omission."

A copy of the CCJO is available at the U.S. Joint Forces Command website at www.jfcom.mil/newslink/storyarchive/2009/CCJO_2009.pdf.

LAST LANDMINE CONTAINING VX NERVE AGENT DESTROYED

The Army Chemical Materials Agency destroyed the last U.S. landmine containing VX nerve agent on 24 December 2008 at the Anniston Chemical Agent Disposal Facility, Alabama. This destruction completes efforts to destroy VX stockpiles at six disposal sites: Anniston; Newport, Indiana; Pine Bluff, Arkansas; Tooele, Utah; Umatilla, Oregon; and Johnson Island (800 miles southwest of Hawaii).

The Department of Defense originally stockpiled some 4,400 tons of VX, the least volatile but most potent chemical warfare agent, which it produced at Newport Chemical Depot during the 1960s. That production facility was destroyed in 2006.

Remaining VX nerve-agent munitions are securely housed at the Blue Grass Chemical Activity near

Richmond, Kentucky, where a neutralization facility is under construction.

FIRST INTERMEDIATE SYSTEMS ACQUISITION COURSE HELD IN SOUTHWEST ASIA

The Defense Acquisition University trained 18 Soldiers, Department of Defense civilians, and contractors at Camp Arifjan, Kuwait, through the first Intermediate Systems Acquisition Course to be held in Southwest Asia. The students, including some deployed to Afghanistan and Qatar, attended the week-long course hosted by the 401st Army Field Support Brigade. The course is part of three Acquisition, Technology, and Logistics Workforce Education, Training, and Career Development programs—the level II certifications in program management and life-cycle logistics and the level III certification in contracting.

The class included information on acquisition, supply movement, facilities, and budget that helps logisticians in theater administer fielding programs, such as the one for the mine-resistant ambush-protected vehicle, to the warfighter effectively. Before the classroom instruction, students had to complete 35 hours in online training.

Previously, a student in Southwest Asia would travel to Germany to attend the class, costing the Department of Defense about \$5,000. Having the class in Kuwait saved some \$3,000 per student.

NEIGHBORHOOD ELECTRIC VEHICLES DRIVE ARMY TOWARD ENERGY INDEPENDENCE

The Army's largest acquisition of electric vehicles is underway, bringing the service a projected multimillion-dollar fuel and vehicle-lease savings, reducing carbon-dioxide emissions, and allowing it to meet future requirements for energy independence. On 12 January, Fort Meyer, Virginia, received the Army's first 6 of more than 4,000 neighborhood electric vehicles (NEVs) planned. The Army will receive 800 NEVs this year, an additional 1,600 in 2010, and another 1,600 in 2011.

According to Secretary of the Army Pete Geren, the acquisition moves the Army 42-percent closer to meeting the 2007 Energy Independence and Security Act requirement for a 2-percent reduction in the Army's annual petroleum use by 2015. The purchase will also prevent the release of some 218.5-million pounds of carbon dioxide into the



The Army is acquiring some 4,000 neighborhood electric vehicles to replace nontactical vehicles. The cars are legal to operate on roads with speed limits under 35 miles per hour and can go 30 miles on an 8-hour charge.

environment. The vehicles will replace nontactical vehicles operated primarily on installations.

The Army will have to spend some \$800,000 to install the infrastructure needed to charge the vehicles, but Secretary Geren says the 11.5-million gallons of gasoline saved over the 6-year life of the 4,000 vehicles will offset the cost.

Global Electric Motorcars, a Chrysler company, manufactured the first NEVs. The Army will lease additional cars through the General Services Administration, which will solicit bids from additional vehicle manufacturers.

ARMY RESEARCHES UNMANNED GROUND VEHICLE FOR CONVOY OPERATIONS

The Army Tank Automotive Research, Development and Engineering Center and Oshkosh Defense have signed a 3-year, cooperative research and development agreement to pursue unmanned ground vehicle technology for use in convoy operations. The Army hopes to integrate convoy active safety technology into the Oshkosh unmanned TerraMax vehicle to create an unmanned lead vehicle that can navigate and communicate route information to an unmanned follower vehicle.

The vehicle would have to have the capacity for safe, near-autonomous operations among vehicles, people, animals, and other obstacles in a tactical environment. If successful, the technology developed

through this agreement could potentially be used in the future in other Oshkosh vehicles, such as the heavy expanded mobility tactical truck and the heavy equipment transporter.

Oshkosh first developed unmanned ground vehicle technology in response to a Department of Defense mandate that one-third of military vehicles be operated without drivers by 2015.

CENTER OF MILITARY HISTORY SEEKS GLOBAL WAR ON TERRORISM STORIES

The Army Center of Military History wants to hear from logisticians in all components (Active Army, Army National Guard, and Army Reserve) and at all leadership levels who have served in the Global War on Terrorism (GWOT). The center is working on a GWOT collection and needs Soldiers and units to contribute and to help preserve—

- Personal experience papers and oral interviews.
- Operation, mobilization, demobilization, and movement orders.

- Operation plans, summaries, storyboards, maps, charts, and drawings.

- Command and battle update briefs, tactical update assessments, after-action reviews, and lessons learned.

- Key leader personal files, emails, correspondence, notes, meeting minutes, and journals.

- Intelligence and significant activity reports and summaries.

- Award recommendation packets and witness statements for awards at the level of the Army Commendation Medal with V device and above.

- Unit alpha rosters without Social Security numbers.

- Public affairs news releases and hometown articles.

- Combat and other photographs with good captions.

- Special studies and briefings.

To contribute to the GWOT collection or obtain more information, email Lieutenant Colonel Robert Smith, the Global War on Terrorism project officer, at Robert.Smith38@us.army.mil.



CUSTOMER FEEDBACK IMPROVES OUTLOOK OF DOD DISTRIBUTION PROCESS OWNER

The U.S. Transportation Command (TRANSCOM), the distribution process owner (DPO) for the Department of Defense (DOD), has received feedback from customers and employees on how the agency is performing. Some 90 percent of 397 individuals surveyed in November 2008 said that DPO initiatives have helped reduce delivery time to the warfighter, but they want to see more evidence, such as metrics, showing that the DPO is meeting its objectives. On average, respondents thought the DPO could use greater

A maintenance technician from the 2d Battalion, 505th Parachute Infantry Regiment, 3d Brigade Combat Team, 82d Airborne Division, familiarizes Iraqi mechanics with the mechanical systems of an M1151 up-armored high-mobility multipurpose wheeled vehicle. This training was held in January at Joint Security Station Beladiyat in Baghdad as part of a joint vehicle-maintenance event. The event was designed to prepare mechanics from the 8th Brigade, 2d National Police Division, for the initial fielding of M1151 vehicles to their unit. (Photo by SSG James Selesnick, 3d BCT, 82d Airborne Division PAO)

transparency in decisionmaking and more authority in implementing DOD-wide initiatives.

The DPO scored high in the management of enterprise-wide technology, data, and information. Over 78 percent of respondents believed that their organizations received “an appropriate Return on Investment” in DPO. However, a quarter of respondents disagreed that “the DPO effectively facilitates knowledge sharing,” and almost half responded “not applicable” to the question, “I use the enterprise-wide data that the DPO provides to

manage distribution within my organization.” The DPO noted that this feedback indicates a need to further develop knowledge sharing and customer awareness of available tools.

The survey also brought to light a need for more extensive education efforts on distribution-related topics. At least two respondents indicated that, though training is developed, priority is not given to this type of education. Another respondent requested “better education of unit logistician and contracting officers.”

PROFESSIONAL DEVELOPMENT

OPERATIONAL CONTRACT SUPPORT COURSE

The Army Logistics Management College (ALMC) held the first Operational Contract Support Course (OSCS) in February at its Huntsville, Alabama, campus. Twenty-two students received diplomas from Colonel Shelley Richardson, the ALMC Commandant, who also gave the graduation address.

OSCS prepares officers, warrant officers, noncommissioned officers, and Department of Defense civilians assigned to tactical staffs at the brigade through theater Army levels who will assist in planning and integrating contract support during deployments.

The course teaches students how to prepare acquisition-ready requirements packages and manage unit contracting officer’s representative responsibilities for basic service and supply contracts.

The class includes practical exercises in preparing performance work statements, independent government cost estimates, and purchase requests and in conducting contract performance oversight.

The class is open to all components of all services and is designed for personnel who will be assigned to units with contract planning and management duties. Graduates of the course will receive additional skill identifier 3C.

ALMC has scheduled future courses at Huntsville and at the main ALMC campus at Fort Lee, Virginia. The next class is scheduled for 15 June. For more information about the course, visit www.almc.army.mil/hsv/ocsc.htm.

FIT OFFERS DEGREE WITH A CONCENTRATION IN HUMANITARIAN AND DISASTER RELIEF

The Florida Tech University College offers a master of science degree in logistics management, with a concentration in humanitarian and disaster relief

logistics. The concentration is offered in response to the Army’s increased involvement in humanitarian and disaster relief operations that require support from the logistics community.

The program teaches logistics principles and the administration and organization of humanitarian assistance and disaster relief services. Students also learn basic human rights principles, international humanitarian law, and the economic and political milieus of areas in need of humanitarian assistance.

Graduates will understand the role of the humanitarian assistance supply chain to deliver the right supplies to the right people at the right time and in the right quantities. They will have the skills to—

- Identify the short- and long-term logistics needs of emergencies.
- Plan and execute logistics and supply-chain activities associated with disaster preparedness, mitigation, and response.
- Recognize the needs of affected populations (including public health and nutrition).
- Plan, execute, and review the effectiveness of programs to meet humanitarian and disaster relief needs.
- Improve established disaster relief and humanitarian assistance logistics operations.
- Collaborate and cooperate with local international nongovernmental organizations, host governments, military forces, and United Nations agencies.

The program is open to anyone who has a bachelor’s degree. Courses are taught online and at several off-campus locations, including Fort Lee, Virginia; Alexandria, Virginia; Hampton Roads, Virginia; and Redstone Arsenal, Alabama.

Registration for the fall 2009 semester begins 6 July, and classes start 24 August. For more information about the program, prospective students can visit the Florida Tech University College extended studies webpage at <http://uc.fit.edu/es>.

RECENTLY PUBLISHED DOCTRINE

Joint Publication (JP) 4-10, Operational Contract Support, provides instruction for “planning, conducting and assessing operational contract support integration and contractor management functions in support of joint operations.” The document specifically covers contingency contracting operations that are not part of the engineering arena. (Construction contracting information can be found in JP 3-34, Joint Engineer Operations.) JP 4-10 also defines numerous terms for the contracting community and lays out contracting and contract management principles. It also defines the five key steps of the contract management process: planning, predeployment actions, deployment and reception, in-theater management, and redeployment.

Field Manual (FM) 3-07, Stability Operations, focuses on establishing civil security and control, restoring essential services, and providing support to governance, economic, and infrastructure development. FM 3-07 provides a total approach to planning and assessing stability operations by building on precepts from FM 3-0, Operations, and FM 5-0, Army Planning and Orders Production. It establishes essential stability tasks, including “those always performed by military forces, those military forces must be prepared to perform, and those best performed by civilians with the appropriate level of expertise,” and stability-focused core and directed mission-essential task lists (METLs) for brigade- to corps-level units. This manual also brings Army doctrine in line with joint doctrine to ensure consistency and compatibility.

FM 7-0, Training for Full Spectrum Operations, incorporates lessons learned from recent operations and embeds concepts found in the Army’s newest doctrinal publications into training. FM 7-0 replaces the METL with the contingency mission essential task list (CMETL) and standardizes the CMETL for units at the brigade level and above. In addition to the CMETL, units will have a directed METL (DMETL). The DMETL is designed to prepare units for a specific mission or deployment, including those in support of joint operations. A third METL, the joint METL, applies only to joint headquarters.

FM 7-0 focuses on training Soldiers in offense, defense, and stability or civil support operations for the expeditionary cycle. It includes a definition for training and incorporates “train as you will fight,” a longstanding Army concept—neither of which have been formally added to Army doctrine before.

Other new items include a requirement to conduct a commander’s pretraining dialog—where a commander and his leader discuss what to train, what not to train, the risks associated with those expectations, the conditions of the training, reset issues, training timelines, and the resources needed to conduct the training. A new training management model is based on the operations model and incorporates feedback as a requirement throughout the entire process.

To accompany this doctrine, the Army is developing an internet-based training network to replace “how to” training documents, including FM 7-1, Battle Focused Training; Training Circular (TC) 25-20, A Leader’s Guide to After-Action Reviews; and TC 25-30, A Leader’s Guide to Company Training Meetings.

Detailed survey results are available on the DPO website at www.transcom.mil/dpo by selecting “Stakeholder Assessment Nov 08” in the left-hand column.

ARMY COMBAT READINESS AND SAFETY CENTER LAUNCHES NEW ONLINE TOOLS

The Army Combat Readiness and Safety Center launched a new website in January. The website, found at <https://safety.army.mil>, is more user-friendly than the previous site and has an in-depth contact list to link users with program managers when they have questions. The site also has a feedback page that allows the center to make continuous improvements to the website based on customer feedback.

In addition to the center’s website, an online range and weapons safety toolbox is available to commanders and leaders to aid in accident prevention. The toolbox is located on a different website, <https://crc.army.mil/rangeweaponssafety>, and holds a collection of reference materials, training support packages, training aids, and links to the Defense Ammunition Center Explosive Safety Toolbox and the ground risk-assessment tool.

TARDEC TESTS NEW TECHNOLOGY AT EXERCISE COBRA GOLD 2009

This year’s Cobra Gold exercise was used as a field test and demonstration for two robots from the Army Tank Automotive Research, Development and Engineering Center (TARDEC). Cobra

Gold is a multinational exercise cosponsored by the U.S. Pacific Command and the Royal Thai Armed Forces. The 28th exercise was held in Thailand in February.

The TARDEC Intelligent Ground Systems Mission Payload Integration Team evaluated CHAOS, a product by Autonomous Solutions Incorporated, and demonstrated the Warrior 700 by iRobot during the exercise. CHAOS can remotely enter hazardous areas only accessible by foot and can navigate very loose, steep, and rough terrain. This

could reduce risks to Soldiers who currently conduct missions in such environments. The Warrior 700, like CHAOS, is designed to navigate rough terrain and staircases while performing a variety of critical mission tasks.

Both robots were tested on tactical logistics supply abilities, mass casualty extraction, and routine and area security—critical tasks supporting the warfighter. The test results will be incorporated into further research and development of robots to meet these needs.

UPCOMING EVENTS

MILITARY LOGISTICS SUMMIT 2009

The 5th annual Military Logistics Summit will be held from 8 to 11 June in the Washington, D.C., metropolitan area. The event, hosted by the Institute for Defense and Government Advancement, will feature updated Department of Defense mission priorities and information for supporting major deployment, redeployment, and distribution operations. The summit will bring together leaders and decisionmakers from the logistics community to discuss the latest initiatives and implementation strategies for ensuring future military flexibility and preparedness. For

more information or to register, visit the summit website at www.MilitaryLogisticsSummit.com.

INTERNATIONAL DEFENCE LOGISTICS 2009

International Defence Logistics 2009 will be held 9 to 11 June at the Hotel Le Plaza in Brussels, Belgium. The conference blends on-the-ground case studies, enterprise-level exploration of organizational efficiency, and transformation information to provide participants with a look at what challenges the logistics community faces in the 21st century. For more information or to register, visit the conference website at www.defencelog.com.

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