ARMY LOGISTICIAN

MAY–JUNE 2007

Logistics Task Force 548 in Iraq

Also in this issue:

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Combined Joint Distribution Cell

CJTF–76 Reconstitution

PB 700-07-03 Headquarters, Department of the Army
Approved for public release; distribution is unlimited.

ARMY LOGISTICIAN

PROFESSIONAL BULLETIN OF UNITED STATES ARMY LOGISTICS

PB 700–07–03
VOLUME 39, ISSUE 3
MAY–JUNE 2007

Cover: This issue of ***Army Logistician*** focuses on the experiences of logistics units in the field, in both Iraq and Afghanistan. A series of eight articles, beginning on page 20, profiles the activities of the Active Army, Army National Guard, and Army Reserve units that formed Logistics Task Force (LTF) 548 in Iraq. Articles beginning on pages 5, 10, and 14 describe aspects of Operation Mountain Thrust in Afghanistan last summer, including the Combined Joint Distribution Cell and reconstitution after the operation. In the cover photo, LTF 548 and explosive ordnance disposal Soldiers demilitarize 155–millimeter and 25–millimeter ammunition.

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Where's My MMC?

BY MAJOR GENERAL MITCHELL H. STEVENSON

The transition to a modular force has resulted in new organizations replacing the familiar structure of materiel management centers. While the changes are significant, logisticians should understand that all of the functions of materiel management will continue to be performed—and in better, more efficient ways.

Probably one of the most dramatic changes that we have made in the concept for logistics support to the modular force has been in the area of materiel management. Gone are the division materiel management centers, corps materiel management centers, and theater army materiel management centers. And so, rightfully, there has been some angst about what happened to all of the materiel management functions formerly performed in these materiel management centers (MMCs). The purpose of this article is to reassure all that we have the functions accounted for, and—though we all will have to get out of our comfort zones and find new, more streamlined ways of doing our jobs—nothing has been lost in the shuffle.

First, I think it is important to remember that the changes we have made were not dreamed up over night. They were, in fact, the product of literally years of study, debate, and careful thought. And while we may not have it exactly right, I think we are darned close, and the enablers coming on line (such as Property Book Unit Supply Enhanced [PBUSE], the Single Army Logistics Enterprise [SALE], Business Intelligence tools, and continued improvements to the Battle Command Sustainment and Support System [BCS3]) will only make materiel management easier and more logical.

Second, in order to understand materiel management in the modular force, it is necessary to understand first how logistics force structure has been streamlined. Each of the brigade combat teams (BCTs) and support brigades in the modular force has an organic brigade support battalion (except for the battlefield surveillance brigade, whose size and structure do not warrant a full-up support battalion). Brigade support battalions (BSBs) and echelons above brigade (EAB) forces are supported by a streamlined structure of sustainment brigades, which are managed by a theater sustainment command (TSC) or an expeditionary sustainment command (ESC) of a TSC. Materiel management occurs in all of these units—the BSB, the sustainment brigade, and the sustainment command. (See the sidebar on pages 2-3 for a summary of modular force logistics organization.)

Probably the easiest way to explain where the materiel management functions have gone is to decompose the old division materiel management center (DMMC), function by function, and explain where each function is now performed in the modular force. The old DMMC essentially performed five functions. It—

- Operated the division property book office (DPBO).
- Operated the division ammunition office (DAO).
- Performed centralized maintenance management.
- Operated a small general support office—basically, class I (subsistence), class IIIB (bulk petroleum, oils, and lubricants [POL]), and water.
- Operated the Standard Army Retail Supply System [SARSS]–2A/D, performing some mostly time-sensitive automated supply management tasks.

This article will examine each of these five management areas and show where each function migrated in the modular force.

Property Book

The old DPBO consisted of a centralized PBO, with property book teams for each of the brigades and major subordinate commands (MSCs) of the division and an asset visibility section. Each of these PBO teams still exists, but instead of being centralized in a DPBO, the teams have been decentralized into each of the brigade-sized organizations of the modular force (which means we now have more PBO teams than ever).

The asset visibility section has been moved to the division and corps G–4 shops to enable the G–4 to see the status of property within the division or corps and take what actions the division or corps commander may direct for the units assigned or attached to the division. Although it is true that non-BCT- and -brigade-sized units of the modular force have no property book "team," they never have had one; nondivisional units (AA-level unit identification code [UIC]) have always had organic PBOs (often an officer dual-hatted into the function). With PBUSE, everyone, at all echelons, has complete visibility of the status of any UIC's property, and—since all the data are centrally maintained on a

central server—no reporting or reconciliation needs to be done. Routine property accountability actions will be handled by PBOs, and reports on the status of particular property book actions (such as directed lateral transfers) will flow through command channels in accordance with local standing operating procedures (SOP). None of this is new.

Division Ammunition Office

The old DAO consisted of a centralized division ammunition officer, an ammunition technician (a warrant officer), a small staff, and a number of ammunition transfer point (ATP) sections that, when deployed, operated with the forward support battalion (FSB) in each brigade area of operations. In the modular force, each BCT and support brigade now has its own brigade ammunition officer, ammunition technician, and senior ammunition noncommissioned officer (NCO)—and a redesigned ammunition transfer holding point (ATHP) that is twice as large the old ATP. Ammunition supply points (ASPs) and theater ammunition storage areas still exist at EAB, run by modular ammunition platoons and companies, under the supervision of the class V (ammunition) management section of the sustainment brigade. Division and corps and army G–4s also are staffed with an ammunition officer and NCO to enable ammunition planning and orders production, establishment of supply rates, and other functions but not management of ammunition units!

The Standard Army Ammunition System Modernization (SAAS–MOD) continues to be the management information system we use. It is made more useful by the fielding of Very Small Aperture Terminals (VSATs) to every node in the ammunition management chain. Eventually, SAAS–MOD will be replaced by the Global Combat Service Support-Army (GCSS-Army) system, which will make ammunition management and supply activities even easier. Finally, as for how ammunition requests flow, the brigade ammunition office will deal with its supporting sustainment brigade class V section (which will roll requirements to the sustainment command) for support.

Maintenance Management

Each BSB, unlike its predecessor FSB, now has quite a robust maintenance management section—one that is several times larger than the one that the FSB had. Each division and corps (and theater army) G–4 likewise has a robust maintenance management capability, much more so than ever before. Brigade and higher commanders are well staffed to be able to see and manage maintenance within their units. The supporting sustainment brigade also has a maintenance management capability—one that is mostly designed for the EAB units it supports but that nonetheless can be tapped, if required, by the division and corps commanders that the brigade supports. The same is true for the sustainment command.

Maintenance reporting (in terms of the Army Materiel Status System [AMSS]) for BCT and support brigade units will flow directly from the BSB to the Army Materiel Command's Logistics Support

Modular Force Logistics Organizations

Modular force logistics is executed by a streamlined group of logistics organizations.

Theater Sustainment Command (TSC). This is the single Army logistics headquarters for the regionally focused Army or Joint Forces Commander (JFC) or the Regional Combatant Commander (RCC). The TSC manages materiel for all Army forces assigned or deployed within the assigned region and, as appropriate, for joint, international, and multinational forces. TSC managers are linked with the G–4s in their areas of operations for resource prioritization. The TSC also coordinates with the AMC Field Support Brigade Commander to support national-level system and materiel requirements.

Expeditionary sustainment command (ESC). The ESC is the TSC's forward presence for expeditionary operations for theater, JFC, or RCC forces. The ESC is a deployable command post for the TSC. The focus is on an assigned area of operations (AO) and those units deployed in the AO (corps or divisions). The ESC synchronizes the AO distribution systems and provides distribution oversight. The ESC can assist in tracking where requests are in the supply system and coordinates distribution assets when appropriate to redirect essential items based on the priority of support and the division or corps commander's priorities.

Army Sustainment Command (ASC). This is the single Army national materiel manager for units stationed in the continental United States (CONUS). ASC is a subordinate unit of the Army Materiel Command. It provides continuous equipment and materiel readiness to CONUS forces through effective planning, resourcing, and materiel and distribution management in accordance with the Army Force Generation (ARFORGEN) process. It achieves this by synchronizing strategic with operational and tactical logistics and

Activity (LOGSA). EAB unit AMSS data will flow as always, using the sustainment brigade support operations office (SPO) for assistance as required. Local, unit-unique reporting of maintenance status will be performed in accordance with the commander's SOP.

Maintenance management reports, such as the Standard Army Maintenance System (SAMS) 026 report, are now available through LOGSA's Logistics Information Warehouse. These reports soon will be enhanced by a state-of-the-art Business Intelligence tool that will enable the creation of commander's "dashboards" that will be accessible immediately by anyone with an Army Knowledge Online (AKO) password on an as-needed basis. These dashboards will provide timely maintenance status in whatever format the commander prefers. Like property status, these data will be universally available to all with a need to know, taking us closer to the common operating picture we have been seeking to achieve.

General Supply Office

The general supply office is probably the easiest of the materiel management capabilities to account for in the modular force. It essentially operates almost exactly as the class V operation described above. Sufficient capability (in fact, as with class V, more than ever before) exists within each BSB. Requests for support flow to the supporting sustainment brigade. Within the theater, the sustainment command orchestrates the overall flow of support, from external sources to the theater, to its sustainment brigades, and on to the BSBs. Our modular units (BCTs and support brigades) also have a better water production and distribution capability, internal to the brigade, than ever before.

Automated Supply Management

This is arguably one of the more complex materiel management functions, but, after quite a bit of thought and effort, we think we have it right. First, within the BSBs, there is robust staffing within the supply support activity (SSA) and a small management capability within the BSB SPO. Geographic routing identifier code (RIC GEO)—including but not limited to management review file (MRF)—management functions will be split between the sustainment brigade and the sustainment command, with the time-sensitive functions being performed by the brigade and the non-time-sensitive functions performed by the command.

Class II, IIIP, IV, and IX Supply

The Army's current processes have evolved in such a fashion that most class II (clothing and individual equipment), IIIP (packaged POL), IV (construction and barrier materials), and IX (repair parts) supplies flow from the national level directly to the individual SARSS–1 SSA, with little or no intermediate sources of supply or even referral activity. Already, all DMMC-level SARSS management (utilizing SARSS–2A/D) has been eliminated, with functions formerly performed in the DMMC now being done at the corps MMC (CMMC).

by integrating acquisition, logistics, and technology. It accomplishes this in order to quickly and efficiently generate and project combat power to support expeditionary operations. It is, for all practical intents and purposes, the "CONUS TSC" and performs the same materiel management functions for units in CONUS that a TSC would for deployed forces.

Sustainment brigades. These brigades execute the materiel management and distribution guidance from the TSC or ESC (from ASC for those sustainment brigades stationed in CONUS when not deployed.) When deployed, the command relationship with the ESC enables the TSC to issue directives to redistribute and surge logistics capabilities across the theater to fulfill requirements as needed. The sustainment brigade support operations officer (SPO) interfaces with the TSC or ESC (or ASC) materiel managers for asset management, visibility, and distribution to support the division or any other assigned customer units. When deployed, sustainment brigades provide physical distribution and distribution management of materiel to brigade combat teams and echelons-above-brigade units as part of a theater-wide distribution process and area support to units within an assigned AO, normally under the command and control the TSC or its ESC.

Combat sustainment support battalions (CSSBs) and brigade support battalions (BSBs). Both of these units perform materiel management, within their capabilities, for supported units. Both the CSSB and the BSB are enabled with visibility through Standard Army Management Information Systems (STAMIS) such as PBUSE, SARSS–1, SAAS–MOD and SAMS, the Unit Level Logistics System-Aviation Enhanced (ULLS–AE), and the Movement Tracking System (MTS). All are enabled to perform logistics command and control through BCS3.

For more information on modular force logistics, go to:

https://www.cascom.army.mil/private/dcd_css/MCDD/CONCEPTS%20BR/Modular%20Force%20Logistics%20Concept/MFLC%20ver%206.pdf.

In the modular force, we will eliminate one more level of management, the CMMC. As indicated above, non-time-sensitive SARSS-related management functions will be performed by the TSC, or its deployable command post when the command post is used; time-sensitive management functions will be delegated by the TSC to the sustainment brigades for the customers that the brigades support. Corps/Theater Automated Data Processing Centers (CTASCs) have all been collocated at the LOGSA. SARSS–1 transactions will be transmitted directly to the SARSS Gateway through satellite communications (as they are today). Any management actions that are needed for these requisitions will be performed by the TSC or ESC or, in some cases for selected time-sensitive management functions, through its subordinate sustainment brigades.

Class II, IIIP, IV, and IX supplies actually delivered to the theater of operations will be delivered in "pure-packed" pallets by the distribution assets of the TSC's sustainment brigades directly to the SARSS–1 SSA from which the request was transmitted to the national level. National-level stocks forward positioned in the theater of operations will be released by the national level and likewise will be distributed to the requesting SARSS–1 SSA by TSC transportation assets.

Reporting and Relationships

Reporting, of course, will flow through command channels, so BSBs will report to their BCT headquarters, which will report to division and corps headquarters, and so on. However, BCTs, divisions, and corps are not sources of supply and support, so BSB reports through command channels are *informational*. In order to get support required from higher levels, BSBs and aviation support battalions (ASBs) should submit their requirements and forecasts to their supporting sustainment brigade; when reporting electronically, it is always a good idea to copy (Cc:) others in the sustainment chain who have an interest, such as the ESC and TSC headquarters. In fact, it is also a good idea for BSBs to Cc: the supporting sustainment brigade on their reports through their command channels to share situational awareness. Of course, when all parties are using BCS3, reports are not necessary; since relevant information is populated in BCS3, everyone on the network can see and utilize it.

One of the fundamental principles of the modular force logistics concept is "single (EAB) logistics C2 [command and control]," which will enable the most efficient and effective end-to-end distribution process. Within that construct, sustainment brigades normally are assigned or attached to TSCs or ESCs. TSCs and ESCs routinely assign support areas of responsibility (AORs) to their subordinate sustainment brigades, making them responsible for supporting all units within their assigned areas. If a division headquarters is within a sustainment brigade's assigned area of support responsibility, the sustainment brigade commander should seek out and establish a relationship with the BSBs within that area and likewise link up with and establish a personal relationship with the assistant division commanders (support). Likewise, ESC and TSC commanders also should seek out and establish personal relationships with the supported division commanders and assistant division commanders (support). Most importantly, it is essential that EAB logistics planners be in touch with corps, division, and brigade logistics planners so that a maximum amount of collaborative planning can occur routinely, from day to day.

(Note: Though it is preferable that operational AORs assigned to maneuver commanders coincide with EAB support AORs, that may not always be possible. When they do not, the logistician's job can become more complex. So logisticians just need to be sensitive to this possibility and account for it when it is the case.)

It is true that modularity has created a major change for us logisticians, in terms of how we are organized and how we do our business, especially at EAB. Internal to BCTs and support brigades, we have designed a robust, nearly independent logistics support structure focused on the BCT and brigade, giving it staying power. The supporting sustainment brigade is key: It is the single source of support to BSBs within its assigned support AOR and provides the means to get materiel distributed from the theater-level air and sea ports of debarkation to the BSBs and to their own non-brigade-aligned customers. Where's the materiel management? It's still there—embedded within a very capable, efficient, streamlined support structure. **ALOG**

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Integrating Coalition Logistics at the Tactical Level: The Combined Joint Distribution Cell in Afghanistan

by Lieutenant Colonel Courtney Taylor and Captain Leonard B. Della-Moretta III

Operation Mountain Thrust, the largest offensive operation in Afghanistan since the ousting of the Taliban in 2001, began on 15 May 2006 with shaping operations by units of Combined/Joint Task Force-76 (CJTF–76) in Regional Command South (RC South). These shaping operations created an extraordinary strain on the coalition's limited distribution assets. To coordinate the assets from multiple coalition forces, an organization was needed that could provide support at the tactical level similar to that provided at the strategic and operational levels by the U.S. Central Command's (CENTCOM's) Deployment and Distribution Operations Center. The answer was the Combined Joint Distribution Cell (CJDC). This prototype organization was developed to enable the efficient use of constrained coalition distribution assets and provide continuous synchronization and sustainment throughout the operation in a complex combined-joint environment.

Building the CJDC

Before the CJDC could be designed and built, planners had to identify the support it would be required to provide. The first challenge was to identify which commodities could be leveraged across the coalition.

Class I (subsistence) and water were obvious requirements, so a class I commodity manager was included in the CJDC. However, providing class III (petroleum, oils, and lubricants) posed a few problems.

A French soldier mans his weapon as an American C–17 Globemaster approaches for a landing at Kandahar Airfield. Coordinating all coalition logistics assets was a primary mission of the CJDC during Operation Mountain Thrust.

While United Kingdom forces use JP8—the standard American fuel for tactical vehicles—most other European militaries use diesel, and Afghan National Security Forces (ANSF) use both diesel and unleaded gasoline. These differences dictated that a fuel commodity manager would have to be added to the CJDC. Because the Afghans were still developing their munitions logistics capabilities, a class V (ammunition) commodity manager also was included to assist in managing and coordinating ANSF munitions. The last commodity manager added to the team was a class IX (repair parts) manager. This manager was needed because the harsh terrain and weather of Afghanistan and the anticipated battle losses in the inevitable fights to come would lead to a high demand for parts.

Identifying the personnel needed to distribute these commodities became the next focus in organizing the CJDC. Because planners lacked information on the routes and distances that coalition forces would need cover in Operation Mountain Thrust, aerial delivery would have to be the primary means of distribution. Accordingly, an Air Force logistics planner was placed on the CJDC staff to perform three roles—

- Plan airdrops using the Containerized Delivery System.
- Coordinate for fixed-wing aircraft to deliver sustainment to Kandahar for Operation Mountain Thrust.
- Coordinate for rotary-wing aircraft to provide support for logistics operations.

The planners also included a host-nation trucking section in the CJDC to coordinate for host-nation support; this would streamline the process for supporting units by truck and maximize the use of finite trucking resources. The host-nation coordinator also served a second role: synchronizing and tracking all coalition logistics movements.

Overcoming Challenges

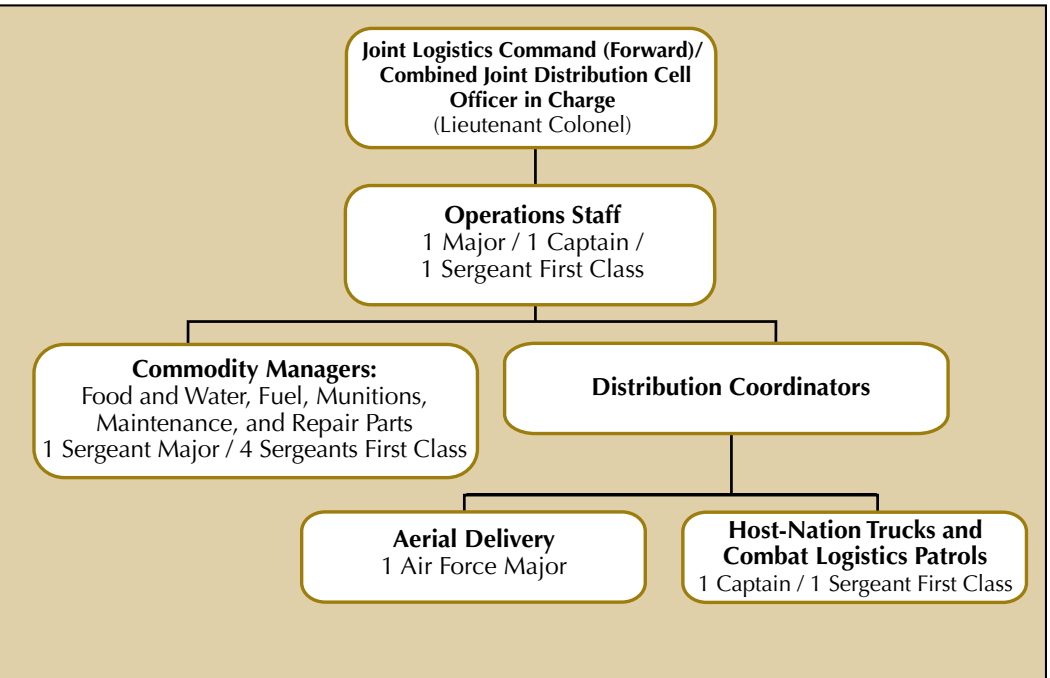
Once the CJDC was manned and deployed to support the maneuver operation, multiple challenges arose, both anticipated and unanticipated. Four primary challenges had to be overcome. These challenges stemmed from the fact that the CJDC was a new organization that executed logistics in a radically new way.

The first challenge was rooted in the fact that, in a coalition military environment, logistics support is, by doctrine, a national responsibility. This national orientation resulted in the creation of stovepipe national support structures, fostered redundant national logistics efforts, and blinded national logistics staffs to the capabilities and operations of other coalition forces. The second challenge also was typical of operations in a multinational environment: participating countries all placed "national caveats" on their forces, restricting what they could or could not do. Often, these caveats were polar opposites for the many countries working to solve logistics issues. The third challenge resulted from the need for the CJDC, as a new organization, to literally introduce itself, describe its capabilities, and sell its services to the units that it was going to support. Finally—and this would become an ongoing challenge—the CJDC possessed no tasking authority over any assets; it could only facilitate and coordinate.

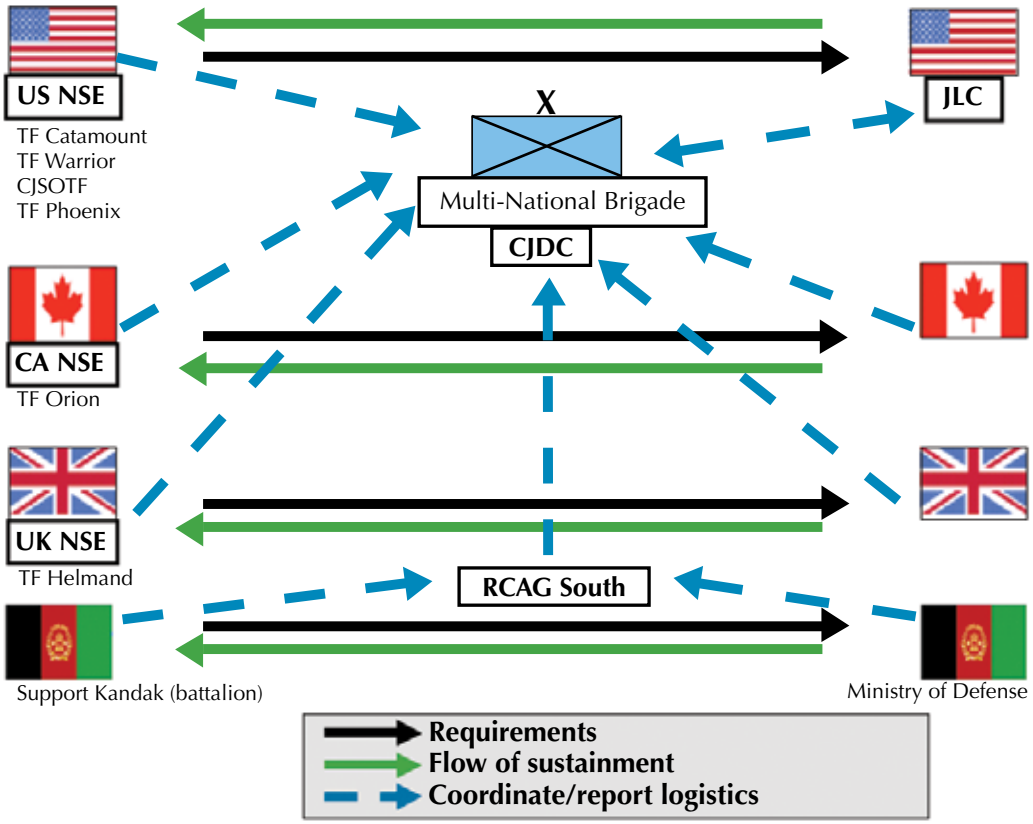
The CJDC's unique mission required close coordination among the CJDC; the Afghan National Army (ANA); the Afghan National Police, the Combined/Joint Special Operations Task Force-Afghanistan; the Canadian, British, and Dutch Armies and Air Forces; U.S. and Australian Army aviation units; and the U.S. Air Force Air Expeditionary Group and Air Terminal Operations Center. While the U.S. National Support Element provided direct support to U.S. maneuver forces, the CJDC tied all the entities together to leverage coalition logistics capabilities, using economy of force, to meet all requirements in the most efficient manner.

In order to effectively support the warfighter, the CJDC focused on the five tactical logistics imperatives: integration, anticipation, improvisation, responsiveness, and continuity. These imperatives allowed the CJDC to coordinate support efficiently across the full spectrum of operations.

Integrating all distribution assets is critical to meeting the command and control challenges inherent in a multinational environment. Key personnel played a critical role in the effectiveness of the CJDC. These key personnel included the commander of the 330th Transportation Battalion (Movement Control) (Airborne)—who also served as the Joint Logistics Commander (Forward)—and S–3



Organizational structure of the Combined Joint Distribution Cell.



The flow of logistics coordination among the coalition partners in Regional Command South during Operation Enduring Freedom 05–07.

Legend

CA = Canada
CJDC = Combined joint distribution cell
CJSOTF = Combined joint special operations task force
JLC = Joint Logistics Command
NSE = National support element
RCAG = Regional Command Advisory Group
TF = Task force
UK = United Kingdom
US = United States

staff, a U.S. Air Force logistics officer, key commodity managers from the Joint Logistics Command, the ANA Regional Command Assistance Group S–4, and British and Canadian Army noncommissioned officers.

Before the CJDC was established, each coalition force was responsible for its own logistics support. Few, if any, assets from one coalition force were being used to support another. So integrating logistics assets from one nation to support another broke new ground, and the CJDC initially faced many obstacles.

For instance, national caveats prevented the British from escorting host-nation trucks and British rotary-wing aircraft from flying to non-British forward operating bases (FOBs). (An FOB is a semipermanent camp that forces can establish rapidly; it enables warfighters to extend their operational area while providing a defensible perimeter and some minimal level of comfort.) The Canadians had no rotary-wing aircraft, and their nearest fixed-wing aircraft were based outside of the Combined/Joint Operations Area (CJOA). Still another example of the logistics difficulties facing the CJDC was using U.S. fixed-wing aircraft to support a U.S. FOB that was 15 kilometers away from a British FOB that was supported by British rotary-wing assets.

Preparing the Battlefield

The CJDC began planning to synchronize all coalition distribution assets by identifying what was available. The CJDC then began coordinating distribution operations using all of the coalition forces' logistics assets.

The process began to work immediately. All of the coalition forces' national support elements began coordinating directly with the CJDC for logistics-distribution and combined-logistics operations. British C–130s and helicopters began sustaining the U.S. 2–87 Infantry Battalion in the Baghran Valley. U.S. fixed-wing aircraft began moving British commodities to Camp Bastion, while Dutch C–130s began moving sustainment stocks to U.S. Forces at Tarin Kowt. A Canadian C–130, based at Kandahar, conducted several aerial resupply missions in support of U.S. Forces; these Containerized Delivery System missions were the first aerial resupply missions conducted by Canadian Forces since the Korean War.

For overland sustainment, the CJDC's host-nation truck section coordinated truck support for all nations, becoming the single point of contact for procuring trucks to move rations, water, fuel, barrier materials, and major items.

A realistic and executable concept of support was paramount in this environment. While developing the concept of support for Operation Mountain Thrust, the CJDC anticipated that an intermediate staging base (ISB) would be required to support combat logistics patrols along the ground lines of communication (GLOC). Forward arming and refueling points were established along these routes to support distribution efforts. An agreement between the U.S. and British Forces allowed for each nation to be responsible for operating one forward arming and refueling point while being allowed to share use of the other.

Improved Container Delivery System (CDS) bundles fall out of the back of a C–130 Hercules. CDS bundles were one of the key ways that Coalition Forces were kept supplied. *(Photo by Senior Airman Brian Ferguson, U.S. Air Force)*

Some distribution challenges were not to be easily overcome. To illustrate some of the challenges facing the CJDC, consider the following statistics—

- Afghanistan is larger than Iraq—by 130,759 square miles—yet it has 22,126 fewer miles of paved roads.
- Afghanistan has one-third as many intratheater C–130 or equivalent fixed-wing airlift as are found in Iraq.
- Afghanistan is completely landlocked, while Iraq has three water ports.
- Afghanistan has one aviation brigade (including coalition assets), while Iraq has two U.S. Army aviation brigades and six additional U.S. Army aviation battalions.

These statistics illustrate the distribution limitations and challenges that had to be overcome both by air and on the ground. Combat logistics patrols had not been used to a large extent before Operation Mountain Thrust. Use of rotary-wing assets was limited by the need to meet already existing sustainment requirements, and fixed-wing assets could not be used to their fullest extent because of a lack of forward landing strips and an Afghan infrastructure that was inadequate at best and nonexistent more often than not.

Executing Mountain Thrust

When the ground assault convoys of Operation Mountain Thrust began to move, they had limited firm engineer data and intelligence information on the routes to be traversed. The only information available came from satellite imagery, standard 1:50,000-scale maps, and aerial reconnaissance. The harshness of the terrain faced by the operation cannot be overemphasized.

U.S. forces began moving from Bagram, Konar, and Orgun-E, traveling between 300 and 700 kilometers to the provinces of Oruzgan, Kandahar, and Helmand in southern Afghanistan. Some units moved into areas that had not been occupied by coalition forces during any previous part of Operation Enduring Freedom. To ensure that the units had ample supplies on hand for the initial occupation of their forward positions, the CJDC coordinated to integrate host-nation trucks within the task force's movements. The host-nation trucks moved rations, water, fuel, engineer equipment and light sets, which enabled the task force's organic vehicles and forward support companies to move two ammunition basic loads and other sensitive items.

As maneuver operations continued, it became clear that the GLOC could not be secured on a consistent basis. The enemy situation along the GLOCs prompted the implementation of an improvised, multimodal hub-and-spoke distribution plan. Supply commodities flowed via fixed-wing aircraft into an ISB. Rotary-wing assets then were used for onward movement of those supplies to their final destination. U.S., British, and Canadian C–130s pushed assets to the ISB, and British and U.S. helicopters completed the onward movement from the ISB. Much of the cargo also was airdropped.

During decisive maneuver operations, the inevitable challenges arose and the CJDC responded quickly with the required capabilities. An example of these challenges was the recovery of a destroyed Canadian light armored vehicle. The harsh terrain prevented any Canadian assets from recovering the vehicle. U.S. and Canadian forces executed a joint patrol, but successful recovery of the vehicle eventually required a U.S. recovery vehicle.

The synchronization of all distribution assets served as a combat multiplier. A prime example involved Task Force Knighthawk, a multinational, mixed-asset aviation battalion to which two Australian CH–47 cargo helicopters were attached. This allowed for a seamless tasking chain that, in turn, maximized lift assets across the CJOA. The CJDC's systems and processes provided more responsive support while reducing the overall aircraft operating tempo, risks to soldiers, and the logistics footprint.

Commodity and equipment use proved to be another hurdle to overcome. Two prime examples included fuel sustainment and the use of electronic countermeasure (ECM) devices. Fuel sustainment was a challenge for all coalition partners. The vast majority of fuel deliveries were conducted by host-nation contracted carriers, but these deliveries unfortunately were subject to considerable pilferage. At one point, almost half of all fuel being pushed to the British was being stolen. Of the fuel that reached its destination, only 80 to 90 percent could be downloaded because so many fuel delivery vehicles were in a state of disrepair. Coalition forces were unable to solve the problem by internal means

(such as stamping forms and verifying signatures). The problem finally was solved with the issuance of a coalition-wide standing operating procedure that produced reliable upload and download data. These data enabled the contracting cell to charge for all missing fuel and deny payment for the mission to a carrier missing fuel. A positive side-effect was that the carriers began to enforce higher standards of conduct on their drivers in order to protect their profit margins.

The use of ECMs also required attention. Because of the enemy's increasing reliance on improvised explosive devices, CJTF–76 directed that all elements operating outside of a base camp or FOB use ECMs. For those coalition forces that had been using ECMs for many years—primarily the U.S. and British forces—this requirement was easy to implement. The other coalition forces required assistance, which the CJDC swiftly coordinated to provide. The Dutch, Canadians, and Romanians did not have any ECM devices. To remedy this dilemma, the U.S. loaned out ECM systems to each national element (in accordance with the Acquisition Cross Servicing Agreement [ACSA]) until their national sustainment lines could provide organic systems. This solution had the added benefit of making the ECMs of those three partners (whose areas of operations bordered one another) completely compatible for joint and combined operations.

Upon the successful conclusion of Operation Mountain Thrust, the redeployment of assets also proved to be a challenge. To mitigate the existing transportation shortfalls, the CJDC coordinated assets to ensure synchronized support throughout the battlefield. One instance involved coordination with the Dutch Task Force for use of their lift assets to backhaul containers, with the U.S. Task Force providing container-handling support to the Dutch. Other agreements included transfer of multiple 50,000-gallon fuel bags with hoses and couplings to the Dutch at an outlying FOB, thus ensuring that bulk petroleum operations would continue. These reciprocal agreements were coordinated by the CJDC but documented through the use of the ACSA.

Lessons Observed

The ACSA proved to be a great combat multiplier because it allowed coalition and joint forces to use three different means of compensation: monetary, reciprocal service or supply, and reciprocal monetary-equivalent service or supply. This allowed for services and goods to be provided to all coalition members while streamlining the remuneration process. The built-in flexibility of being able to provide compensation through different means made cross-coalition support appealing as well as cost and time effective.

In order to set the stage for the eventual transition of the entire CJOA to the ANA, the CJDC conducted numerous coordination and cooperation events. The two primary events involved ANA riggers and senior officers from the ANA Central Movement Agency (CMA). The ANA riggers worked side by side with U.S. riggers to construct over 40 humanitarian assistance bundles. These trained ANA soldiers provided a skill set that was in short supply during the conduct of decisive operations. The event with the CMA provided the ANA an opportunity to observe and adopt the systems, processes, and procedures of the CJDC. These two events had an impact across the spectrum of operations. Strategically, the ANA was allowed to take a step closer to assuming the full duties of the war; operationally, the riggers prepared multiple bundles to be delivered by Container Delivery System; and tactically, the CMA soldiers were employed to directly support ANA units in the field. Once the transition of authority from coalition nations to the ANA begins in the near future, these skill sets will ensure that the process is smooth and efficient.

The CJTF–76 Combined Joint Distribution Cell integrated multiple coalition partners to sustain maneuver forces in Operation Mountain Thrust, which gave the task forces operational flexibility and the ability to maintain momentum throughout their successful attacks. The CJDC used economies of scale by integrating all coalition logistics assets at their disposal while constantly anticipating requirements. The CJDC responded well to the challenges of supporting mobile maneuver forces in extremely austere locations with diverse resources while gaining invaluable experience for upcoming coalition logistics operations. Like CENTCOM's Deployment and Distribution Operations Center at the strategic and operational levels, the CJDC provides an excellent model for future integration of coalition logistics at the tactical level. **ALOG**

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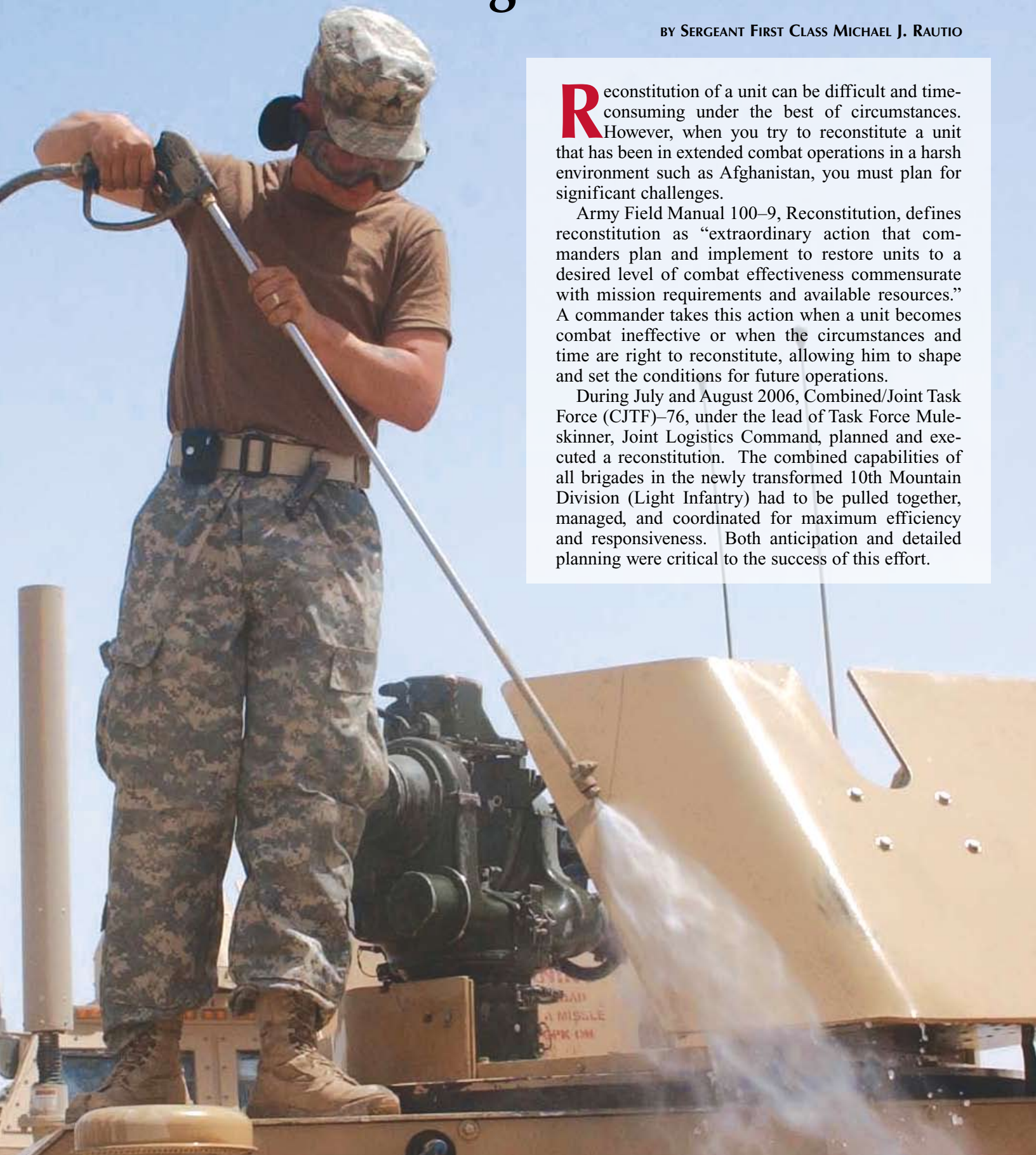
CJTF–76 Tackles Reconstitution in the Harsh Afghan Environment

by Sergeant First Class Michael J. Rautio



Reconstitution of a unit can be difficult and time-consuming under the best of circumstances. However, when you try to reconstitute a unit that has been in extended combat operations in a harsh environment such as Afghanistan, you must plan for significant challenges.

Army Field Manual 100–9, Reconstitution, defines reconstitution as "extraordinary action that commanders plan and implement to restore units to a desired level of combat effectiveness commensurate with mission requirements and available resources." A commander takes this action when a unit becomes combat ineffective or when the circumstances and time are right to reconstitute, allowing him to shape and set the conditions for future operations.

During July and August 2006, Combined/Joint Task Force (CJTF)–76, under the lead of Task Force Muleskinner, Joint Logistics Command, planned and executed a reconstitution. The combined capabilities of all brigades in the newly transformed 10th Mountain Division (Light Infantry) had to be pulled together, managed, and coordinated for maximum efficiency and responsiveness. Both anticipation and detailed planning were critical to the success of this effort.

The Combined Joint Distribution Cell, which served as Task Force Muleskinner Command Post Forward in order to coordinate all coalition logistics assets in Regional Command South to support Operation Mountain Thrust, led the reconstitution effort. Varying capabilities of support units became apparent early during reconstitution planning.

The concept used to determine necessary resources was "places, parts, people, preparation, tools, training, and time." The success of the reconstitution effort could be attributed to the collective efforts of two brigade support battalions (BSBs); an aviation support battalion; Army Field Support Battalion-Afghanistan; a medical task force; Kellogg, Brown, and Root; and the Counter Improvised Explosive Device (IED) Task Force. For example, the 297th BSB provided the bays and washracks (place), conducted detailed rehearsals (preparation), and orchestrated an efficient round-robin schedule for maintenance and enhancements (time). Likewise, Army Field Support Battalion-Afghanistan provided special tools and critical, intensively-managed repair parts, and the aviation support battalion augmented the efforts with additional mechanics (people).

The units being reconstituted—2d Battalion, 87th Infantry Regiment (Task Force Catamount), from Fort Drum, New York, and 2d Battalion, 4th Infantry Brigade (Task Force Warrior), from Fort Polk, Louisiana—made up the combined arms team that had been engaged in combat operations fighting Taliban remnants in eastern and southern Afghanistan.

Tactical Moves

Before beginning extended operations, the units conducted tactical moves, which in some cases covered several hundred miles, from Regional Command East to Regional Command South. For example, just to make it to the southern portion of the country, 2–87 Infantry units had to disengage the enemy in eastern Afghanistan and travel hundreds of miles over harsh terrain while coming under fire from enemy forces. Once in the south, all of the units briefly stopped in Kandahar to execute one final conditions check and address minor problems before moving into the target area of operations. While moving into position, the Soldiers were under almost constant observation and harassment fire as they pushed deep into insurgent strongholds in southern Afghanistan to conduct decisive operations. Many of the valleys where decisive operations were being conducted had not seen a U.S. presence since right after the fall of the Taliban in 2001, if ever.

At left, a Soldier sprays off his vehicle and prepares it for inspection. Spraying down the vehicles was one of the few tasks that the task force Soldiers had to do during reconstitution. *(Photo by Sergeant Michael J. Taylor)*

The move alone would create logistics and maintenance nightmares for any unit. The terrain in Afghanistan ranges from rugged mountains towering more than 23,000 feet above sea level to vast swathes of desert where summertime temperatures frequently soar above 130 degrees and blinding sandstorms reduce visibility to a few feet. Between the mountain peaks, rivers and streams snake through deep valleys and surge in the summer months from the melting snows. The road system is primitive. Most roads are nothing more than a narrow path carved into the side of a mountain. Few paved roads exist, and those are found primarily in the urban areas.

Operation Mountain Thrust

When Operation Mountain Thrust began, Task Forces Catamount and Warrior entered into extended combat operations. They battled an elusive enemy who preferred using improvised explosive devices to fighting toe-to-toe with the task forces. The Soldiers also battled the summer heat, storms, and terrain.

Battle damage ranged from minor damage to catastrophic loss. However, most of the damage to the vehicles in Catamount's fleet was caused by the rough terrain and the weight of the vehicles. The fully up-armored vehicles had many suspension and drive-train problems. But the environment is what took the biggest toll on Soldiers, equipment, and personal and crew-served weapons.

Despite the toll that the environment, fighting, and other factors took on the vehicles and equipment, the fleets were not in shambles when they rolled into Kandahar for the second time. This was because the maintenance teams had fully anticipated and planned for most problems they would encounter. Maintenance was critical because of the remoteness of the area in which the Soldiers were operating and because of the enemy situation.

During combat operations, the most feasible resupply method was by rotary-wing aircraft or Containerized Delivery System drop. With both planes and helicopters in short supply, critical parts and supplies often had to compete for space.

Reconstitution

When combat operations concluded, Task Forces Catamount and Warrior moved to Kandahar Airfield for a major reconstitution effort. This location was chosen because of the proximity of maintenance, ammunition, and general support assets. It featured a runway capable of handling a wide variety of military fixed-wing aircraft, was in the return path of movement, and provided the facilities, equipment, and personnel needed for reconstitution.

Headed by the Combined Joint Distribution Cell (CJDC), the reconstitution task force consisted of

many units that came from a variety of task forces and performed a variety of services.

The Joint Logistics Command used the CJDC to provide on-site command and control. Initially, the CJDC helped expedite the flow of supplies and equipment during combat operations. But as operations began to wind down, the CJDC began focusing on regenerating combat power as the Joint Logistics Command Forward and the command and control for reconstitution.

Because of the wide variety of units coming together to execute this complex mission, the CJDC staff was faced with challenges in ensuring everything from maintenance to personnel recovery was happening as planned. To accomplish this, two things were done. First, the task force being reconstituted was operationally attached to the CJDC. This gave the CJDC commander the flexibility and authority to ensure that all assets were in the proper places at the proper times. Second, the CJDC commander and his staff actively conducted updates with the units going through reconstitution and those performing the reconstitution. The objective was for logistics operations to serve as a combat multiplier and not a constraint.

In addition to ensuring the vehicles and equipment were fully mission capable, the maintenance teams also made sure every vehicle had the most up-to-date protection enhancements. This included installing the most advanced counter-IED technologies and ensuring that each vehicle had a complete up-armor enhancement package.

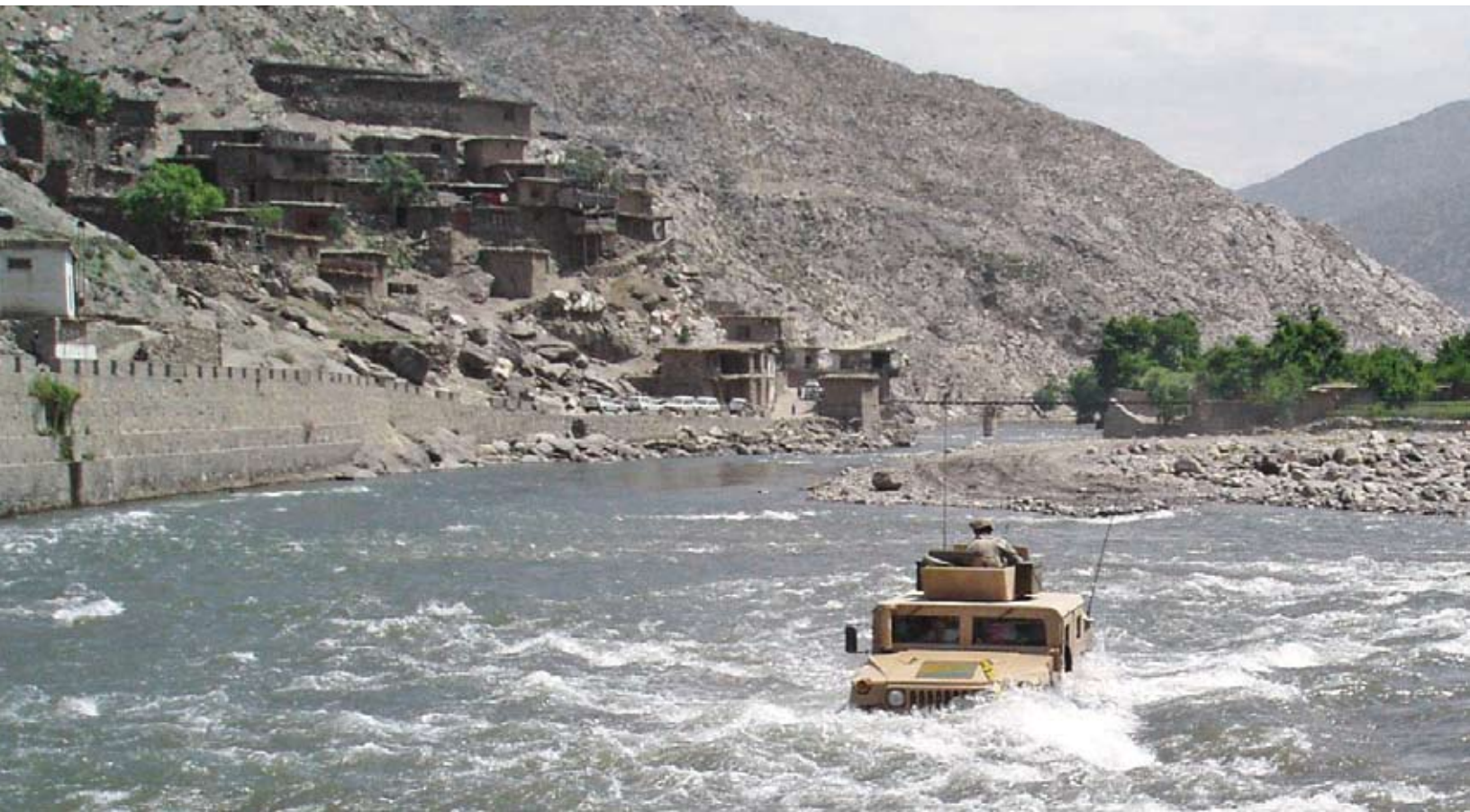
While the vehicles were going through the maintenance process, it became evident that a vehicle identification method was needed. The reconstituting units had a variety of vehicle markings; however, none of them were standardized. Tracking vehicles in the enhancement and repair process called for a system to identify each vehicle quickly and easily. As each vehicle entered the process, it was assigned a number that was displayed on the vehicle. A tracking board was established to track the vehicles through the process by their assigned numbers.

Commander's Assessment

The Joint Logistics Command, headquartered at Bagram Airfield 200 miles to the north, headed the reconstitution and provided oversight and guidance during the planning and execution phases. One of the key factors in making the reconstitution process a success was anticipating units' needs and moving critical parts to Kandahar before the process began. An important piece of this process was the assessment made by the commander of the unit being reconstituted. This assessment allowed planners to position all of the necessary material and equipment so the process could be completed in a timely manner. Having the right parts and equipment in place before the process began was critical.

For this reconstitution effort, the commander's assessment was done in an unconventional way. Task Force Catamount and Task Force Warrior were both

A high-mobility, multipurpose wheeled vehicle crosses a river in Afghanistan at a surveyed, yet unimproved, crossing site.



Soldiers unload their vehicles before turning them in for inspection. *(Photo by Sergeant Michael J. Taylor)*

in contact with the enemy before their disengagement in Kandahar. Because of this, vehicles and equipment could not be evaluated as thoroughly as planners would have liked. To circumvent this, extensive planning and coordination was done over secure connections provided by the Very Small Aperture Terminal. This terminal allowed all task force planners to come together and establish an accurate picture of the status of the equipment and vehicle fleets.

The Army Materiel Command mechanics and technicians of Army Field Support Battalion-Afghanistan, based at Bagram Airfield, also played a key role. They were responsible not only for giving each vehicle a full inspection and fixing any faults but also for installing the most current up-armor enhancements and servicing all communications and night-vision equipment and weapons. (See related article on page 14.)

Taking Care of Soldiers

In addition to vehicle and equipment maintenance, a strong emphasis was placed on giving the individual Soldier a brief tactical pause and a chance to reconnect to the outside world. From the moment the Soldiers first pulled into the reconstitution area, they were treated very well. As part of this reception process, their vehicles were marshaled, they were shown their living quarters, they received an in-brief on what to expect, and they received a complete sundry pack, a new Army combat uniform, and a towel. Cold soda, energy drinks, and sports drinks also were readily available to compensate for temperatures that were still in excess of 100 degrees at night.

"I think everyone was surprised when we got here," said Army Specialist Bryan Garrett of C Company, 2–87 Infantry. "We thought we would be doing a lot of work when we got back, but fortunately we barely had to do anything."

Another facet of this reconstitution that was different was the role performed by Soldiers, in particular the organic support personnel and mechanics in the units being reconstituted. No Soldiers, including mechanics and logisticians, were allowed to work on a vehicle, other than to conduct preventive maintenance checks and services (PMCS). After the initial PMCS, if a Soldier was needed, he was present to facilitate, but his primary focus during the reconstitution process was on getting his personal affairs in order and enjoying the amenities that Kandahar had to offer.

Personnel, finance, legal, medical, religious support, and various other stations were set up for the Soldiers to cycle through. Ample morale, welfare, and recreation opportunities also were made available, including an Internet café and a phone bank for calling family and loved ones. The Soldiers were even given a good taste of home cooking.

"I am really thankful for all the stuff that was done for us," said Army Private First Class Jonathan Maxwell, a scout with A Troop, 3d Squadron, 71st Calvary Regiment. "Nothing builds morale better than coming back, relaxing, and having a freshly grilled cheeseburger."

The goal of CJTF–76 and the Reconstitution Task Force and its associated units was to get each task force through the entire process and back to the fight in 6 to 8 days. Overall, the reconstitution effort was extremely successful. This was best captured when the 10th Mountain Division and CJTF–76 Commander, Major General Benjamin C. Freakley, visited the site and said, "This is logistics at its best."

The Reconstitution Task Force accomplished a monumental feat in reconstituting more than 5,000 pieces of equipment. Every person involved put in long hours under extreme and arduous conditions, living up to the Task Force Muleskinner motto, "Giving the shirts off our backs and boots off our feet to support the fight." **ALOG**

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AMC Support to Reconstitution in Afghanistan

BY WAYNE T. SEIDLER AND LIEUTENANT COLONEL RICHARD B. DIX

The Army Materiel Command (AMC) is evolving to meet the needs of today's warfighter and the requirements of the Modular Force. AMC's Army field support brigades and their battalions are embedded with our forces, so they are fully able to provide AMC reach-back and national- and strategic-level capabilities down to the Soldier as never before. The mission support and capabilities provided by Army Field Support Battalion-Afghanistan (AFSBn-AF) during the Combined/Joint Task Force-76 (CJTF–76) reconstitution operation in Kandahar from 17 July to 21 August 2006 reflected this new, emerging doctrinal support.

AMC provides unique and comprehensive capabilities to support the warfighter in several aspects of the current fight and in meeting future requirements. AMC provides expertise in maintenance and life-cycle management of fielded vehicles and equipment (such as the heavy, expanded-mobility tactical truck and the family of medium tactical vehicles) and is a full-spectrum force maintainer for new production and fielding equipment. (This capability is especially important for new systems that are fielded primarily in Iraq and Afghanistan). AMC also provides an enormous depth of knowledge to the field through logistics assistance representatives (LARs), field service representatives (FSRs), and other contractor support.

This article describes how these capabilities were critical to the success of the CJTF–76 reconstitution operation and provides several lessons learned for future operations. Following reconstitution, CJTF–76's Task Force (TF) Catamount and TF Warrior departed Kandahar on schedule and with renewed vigor and determination to conduct follow-on missions and combat operations, equipped with reconstituted vehicles and weapon systems and with all the newest available force protection enhancements and upgrades. (See the chart on page 19 for the equipment final roll-ups.)

This operation validated once again the need for national- and strategic-level assets forward on today's battlefield to support modularly designed forces in transitioning from combat operations to reconstitution operations and then back to combat operations as quickly as possible. This capability increases the combatant commander's flexibility and initiative by allowing him to employ a revitalized force, both materially and physically, that has the latest technology and safety enhancements. AMC Army field support battalions are well suited to meet this requirement.

After returning from a mission in support of Operation Mountain Thrust, a Soldier of the 2–87 Infantry Battalion uses an air hose to clean sand from his vehicle.

Setting the Framework for Strategic Flexibility

Musa Qala, Sangin, Qalat, and Nahi Sirraj are remote, barren, dust-blown villages hamlets in the Baghran Valley and Zabul Province of southern Afghanistan. Their names are hardly the topic of discussion at Starbucks or even mentioned on the nightly network news broadcasts. Yet their names mark important steppingstones on the continued, unrelenting road to achieving the tactical, operational, and strategic campaign objectives of CJTF–76 and the International Security Assistance Force (ISAF) in Afghanistan.

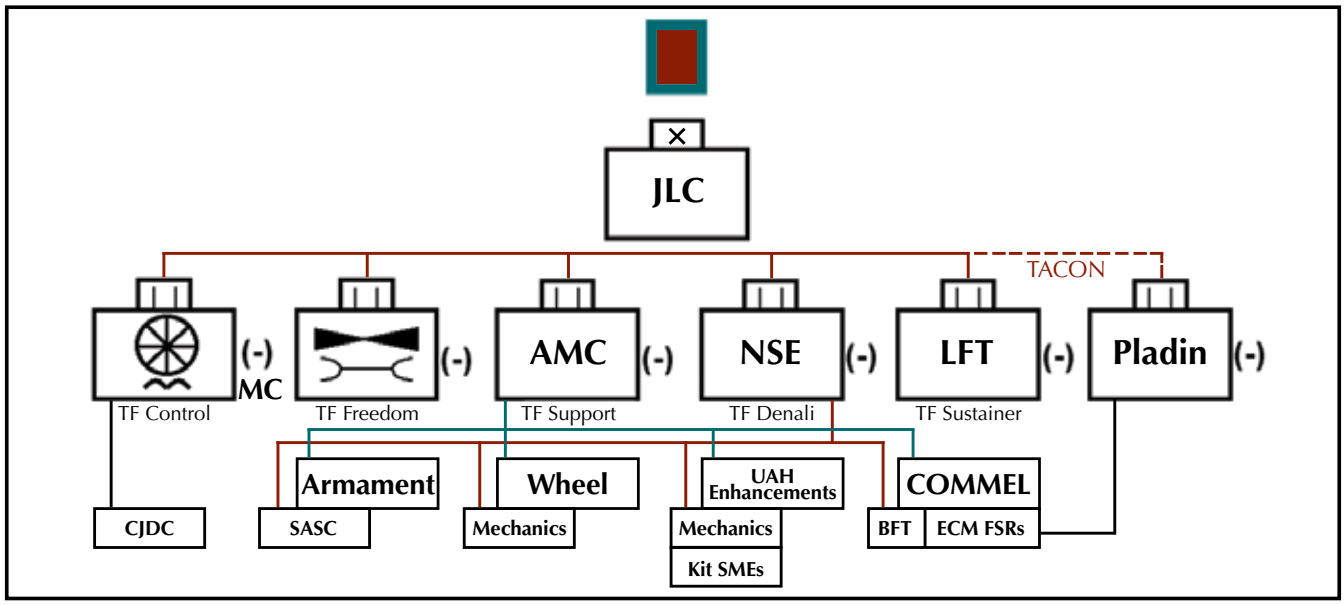
Operation Mountain Thrust terminated in late July 2006, just before the transfer of authority for southern Afghanistan from U.S. Forces to the ISAF. Yet it played a decisive role in moving forward the campaign to attack and combat terrorists in Afghanistan. Mountain Thrust was conducted on terrain largely devoid of vegetation, except around the hamlets that dotted the region, and dominated by mountain ridges and wadis (dry riverbeds) that posed a mobility nightmare. The landscape offered little protection from the frequent 120-degree Fahrenheit temperatures, fierce winds, and talcum-powder dust. CJTF–76 combat forces in these regions were TF Catamount (organized around the 2–87 Infantry Battalion from Fort Drum, New York) and TF Warrior (organized around the 2–4 Infantry Battalion from Fort Polk, Louisiana). These forces were task-organized for their unique missions and were able to conduct full-spectrum operations, with decisive results, against terrorist and insurgent forces in their areas of operations.

The austere conditions challenged man and vehicle alike and required a disciplined force to complete the mission and maintain combat power. Realizing that the equipment of the two TFs had been worked to the limits of its capacity, CJTF–76 directed that they and key campaign-enabling forces be reconstituted at Kandahar Airfield before they refocused on new mission requirements in other regions of Afghanistan. In order to meet this requirement, timely planning and execution, especially to make required resources available, were critical to success. Meeting these imperatives for reconstitution would require ready access to numerous repair parts, synchronization of maintenance assets, and the flow of equipment through the process to create maintenance velocity.

The CJTF–76 mission analysis identified the first challenge in this operation—how to reconstitute a modular force during combat operations. It was not clear what reconstitution operations would be needed for modular units, and so it was necessary to leverage all available combat service support resources to achieve mission success.

In July and August 2006, CJTF–76 tasked the Joint Logistics Command, with support from the AFSBn-AF, to conduct the unique and complex mission of preparing CJTF–76 forces for follow-on combat operations in support of coalition and ISAF goals

Task organization for reconstitution operations in Afghanistan.



Legend

AMC = Army Materiel Command
BFT = Blue Force Tracker
CJDC = Combined Joint Distribution Cell
COMMEL = Communications-electronics
ECM = Electronic countermeasures
FSR = Field service representative
JLC = Joint Logistics Command
LTF = Logistics Task Force
MC = Movement control
NSE = National support element
SASC = Small arms support center
SME = Subject-matter experts
TACON = Tactical control
TF = Task force
UAH = Up-armored high-mobility, multipurpose wheeled vehicle

A Soldier conducts a bore-scope test on an M119A howitzer during reconstitution.

and objectives after their extended combat operations in the rugged regions of southern Afghanistan.

Providing Strategic Assets Forward

AFSBn-AF provided a strategic reachback capability to the Afghanistan Combined/Joint Operations Area (CJOA) with unique mechanic, armament, and air-conditioning skill sets from FSRs and AMC Life Cycle Management Command LARs. The battalion can task-organize according to mission needs and the personnel and equipment that are available in Afghanistan or that can be pushed forward from Kuwait, Iraq, or the United States.

In support of this operation, the assembly of the required personnel, equipment, tools, and parts required a major effort by CJTF–76 and AFSBn-AF in a short time. Seventy-five personnel from several locations within the CJOA and Kuwait were flexed from sustainment missions and quickly moved by military air assets to Kandahar. Meanwhile, five 20-foot containers of tools, shop equipment, and forecasted repair parts were shipped by "jingle" trucks over 370 miles—it was a 3-day trek over a questionable network of roads that challenged both the drivers and their trucks.

These enablers provided the reconstitution team with the personnel, skill sets, and special equipment enhancements that were not available in the Modular Force structure but would be critical to the reconstitution effort. AFSBn-AF provided tailored push packages and teams to meet requirements for sustainment maintenance personnel, up-armored high-mobility, multipurpose, wheeled vehicle (HMMWV) enhancement specialists, weapon system specialists, and equipment FSRs, who were plugged into the reconstitution framework.

The reconstitution operation at Kandahar provided numerous lessons learned in how a reconstitution operation should be managed and how a reconstitution site should be organized. Here is a summary of those lessons.

Maintenance Velocity

Chapter 12, Combat Service Support, of Field Manual 3–0, Operations, emphasizes that commanders must be willing and able to take the initiative in "refitting" their units within the framework of the commander's intent. The organization of a reconstitution site must foster the ability to reconstitute units and allow the commander to set the terms of battle and hold or seize the initiative. The commander can take these actions only if he can view the battlespace throughout its depth in time and resources. In order to meet this requirement, detailed planning and execution, especially for required and available resources, is critical to mission success. Readily available repair parts, the synchronization of maintenance assets, and the flow of equipment through the process result in maintenance velocity.

To achieve the maintenance velocity needed to meet the mission timeline, two important decisions were made early to ensure that the reconstitution effort could maintain the necessary operating tempo. These decisions played a key role in determining the flow of vehicles and in getting required parts to the reconstitution site as fast as possible.

First, vehicle management would be critical to controlling flow and tracking parts. When the first 10 vehicles arrived at the reconstitution site, it quickly became apparent that a common identification system for all vehicles and equipment was needed because there were no common markings or vehicle identifications used across the incoming fleet of vehicles. There were bumper numbers and unit markings from current units and from units long redeployed, Army pre-positioned stock numbers, and no markings at all on newly issued vehicles. So a simple red number on the vehicle grill was used to identify each vehicle; combined with the use of centralized tracking boards in the maintenance area, this number allowed Soldiers, leaders, and mechanics to get an immediate status on each vehicle.

Second, the quick sourcing of parts to repair the vehicles and weapons also became a critical requirement. The 5- to 8-day timeline for reconstituting incoming units restricted the sources of supply to those that could provide a part within that timeframe.

AFSBn-AF sent a robust parts package from Bagram, Afghanistan, but assistance from the CJOA supply support activities and AMC also was critical.

Several actions were conducted simultaneously to enable the sourcing of parts from the assets at Kandahar; parts came from the 297th Base Support Battalion at Bagram and from reachback to the 401st, 402d, and 405th Army Field Support Brigades in Kuwait and Iraq and in Europe. If the part was unavailable from these sources of supply, then the requisition for fill would be forwarded to the unit after movement.

Command and Control and Leadership

A reconstituting unit's self-assessment of its equipment and personnel status must be accurate in order to assist the planning and resource management of the reconstitution effort. The reconstituting unit sets the priorities for unit maintenance, but it must be aware of mission requirements that can cause shifts in available timelines or shop operations. Shifts in priorities must be kept to an absolute minimum to ensure on-time completion of the reconstitution.

The flow of vehicles in the reconstitution site is critical to ensuring mission success. The owning unit must provide access to the vehicles 24 hours a day, 7 days a week, and it must not remove vehicles from the motor park until a call-forward message is received. Repaired equipment must be placed in a controlled, close-hold environment to avoid unnecessary movement.

The reconstitution site needs to track all vehicles and their systems (including enhancements, electronic countermeasure [ECM] devices, and Blue Force Tracker [BFT] systems) to ensure that all work is completed and the vehicles are ready to return to the unit. This tracking process must be actively controlled through daily in-process reviews, tracking charts, and close coordination with a unit representative (commander, executive officer, or first sergeant) responsible for the company's fleet and weapons readiness reporting. A common, easily recognizable system to identify vehicles must be used to track vehicles. Use of traditional bumper numbers is too often undermined by multiple rotations and nonstandard markings.

A company representative (commander, executive officer, or first sergeant) must arrive with the unit's lead elements so the reconstitution process can start with accurate information and with a single point of contact who is present from the beginning and during the entire process, thus ensuring command leadership involvement.

Transportation

The reconstitution site must have airfield access for the movement of critical personnel, equipment, and supplies. However, air movement is a finite asset and must be used wisely. Proper planning and forecasting at all staff levels will enable movements to be made by ground assets for resupply and by air for critical assets.

The establishment of a Combined Joint Distribution Cell at Kandahar enabled movement control personnel to provide timely information on available transportation assets and to prioritize loads. This was a major key to success. (See related article on page 5.)

Maintenance

Maintenance priorities must be clear, simple, and at least sequential when priorities are shifted; the last set of vehicles into the reconstitution site cannot always be the first vehicles out of the site. "Bouncing" maintenance priorities causes delays in shop operations as vehicles move in and out of the maintenance bays and results in possible shortfalls of parts for the new priorities.

All systems and equipment must receive a technical inspection by sustainment maintenance personnel during a reconstitution operation. This ensures that all modification work orders, system upgrades, and enhancements are executed or at least identified for later action.

A Soldier uses a Kalmar loader to move a high-mobility, multipurpose wheeled vehicle during the reconstitution of the 2–87 Infantry Battalion.

Maintenance operations must be a planned phase of all combat operations at all levels of command. Operator and field maintenance must continue to be the cornerstone of every commander's and leader's pre-, during-, and post-combat checks. Leaders must take the time to ensure that proper maintenance is being conducted in order to maximize the serviceability of equipment and thus ensure effective combat power.

Attention to detail must be standard practice across all aspects of an operation, whether combat or maintenance. Band-aid maintenance in many cases takes just as long as proper maintenance to perform, but it hurts combat power in the long run.

An armament technician from the Army Materiel Command helps Soldiers make sure that their weapons are in good working order as part of reconstitution.

Mission Support and Life Support

Billeting at a reconstitution site makes it possible for personnel to conduct operations 24 hours a day, 7 days a week. Lack of a quiet and somewhat comfortable, temperature-controlled sleeping area will affect the ability of those personnel on both day and night shifts to perform their jobs.

Separate billeting areas for the reconstituting unit and for reconstitution personnel will permit the conduct of continuous reconstitution operations. This is because the reconstituting unit will be on a different schedule than the reconstitution personnel, thereby eliminating disruption during each shift's sleep cycle.

It is imperative that the unit's vehicles be kept at the reconstitution site so that the technicians and mechanics can work on them as needed. The vehicles will become "FOB [forward operating base] taxis" unless an accessible, alternate means of transport is provided. Leaders must enforce this policy to increase operational readiness in a timely manner.

Reconstitution Site Layout

Adequate space must be provided to park all of the reconstituting unit's vehicles in company sets. This will allow the unit to maintain the security of its vehicles while giving reconstitution personnel easy access to find a vehicle.

Providing empty containers to the unit will enable it to download equipment usually kept in its vehicles. This will eliminate the need, or the perceived need, to lock individual vehicle doors (which only prevents access to vehicles). It also will enable the reconstitution personnel to conduct enhancement or maintenance work without downloading equipment multiple times.

Adequate lighting in the reconstitution area is needed to find vehicles, parts, and other commodities during nighttime operations. Conducting night rehearsals before actual operations to identify poorly lit areas and requirements for additional lighting is a big help. Adequate lighting in the unit parking area also will reduce the desire of unit personnel to lock their vehicles or park them closer to their living accommodations for security.

Units returning from a long-term mission will have accumulated considerable trash. The reconstitution site must have several trash containers that are close to the parking area and are dumped frequently.

A reefer container with water and other drinks can provide everyone at the reconstitution site with cool drinks. Setting up solar shades over areas where Soldiers congregate (such as the weapons turn-in location or trans-load areas) makes waiting easier.

Equipment Maintenance Trends

Up-armored HMMWVs. Air-conditioners need to be checked and recharged to keep up-armored HMMWVs operating efficiently. Otherwise, personnel will open windows because the air-conditioning is not working, and that defeats the force protection capabilities of the vehicle. Vehicle services must be planned, scheduled, and performed, especially on the suspension, brakes, and calipers. Excessive overloading of the M1151P1 storage area led to several condensers being destroyed during maneuvers over rough terrain.

Weapons and weapon maintenance. Weapons maintenance starts with the first-line supervisors—junior noncommissioned officers (NCOs). There is a direct correlation between an effective weapons maintenance program and an NCO checking his Soldiers' weapons daily. NCOs must have their Soldiers conduct a weapons function check at least daily to

Activity/Operation	Task Force Catamount	Task Force Warrior (+)	Total
Time Period	21–31 July 2006	31 Jul–12 Aug 2006	
Vehicles	120	190	310
Up-armored HMMWV Enhancements	309 kits	845 Kits	1,154 kits
Weapons	545	1,314	1,859
Night-Vision Devices	418	967	1,385
Communications-Electronics Equipment	289	504	793
Electronic Counter-measures Systems	102	153	255
Total	1,783	3,973	5,756

Summary of reconstitution efforts in Kandahar.

confirm the operational status of both the weapon and its ammunition. Improper headspace for the M2 heavy machinegun and incorrect usage of MK93 and M197 weapon mounts are the two major factors contributing to unserviceable weapons. Weapons must be lubricated as specified in their technical manuals with approved "wet" lubricants to prevent malfunctions and reduce wear and tear on parts.

Communications and electronics and night-vision device maintenance. BFT operators need to be trained on BFT maintenance. In particular, the routing of power and antenna cables must be a part of daily preventive maintenance checks and services.

The older model up-armored HMMWV mounts need to be retrofitted with the front-window Defense Advanced Global Positioning System Receiver antenna mount. The old mount is on the rear of the vehicle, which causes compatibility problems in using ECM devices.

Numerous night-vision devices were damaged by improper use or storage. In particular, PVS–14 retainer battery caps had to be replaced because of damage, and PVS–7B intensifier tubes burnt out because of frequent exposure to direct light sources such as vehicle headlights. Hard-case PVS containers are not being used for storage, which could be an indicator that a less-bulky storage container should be designed.

Life cycle management commands need to synchronize employment locations of new and current ECM systems and correct problems caused by the location of wiring in vehicles. (Routing of ECM wiring along the doorframe and exterior of the vehicle can cause severe damage to wiring.) Units must conduct and maintain Soldier and leader training in ECM use and operation. A major lesson learned was that the Army needs electronic warfare officers down to the battalion level.

The basic enabling requirements for an operational Army have changed little. However, the paradigm of where operations like reconstitution now occur in relation to combat operations should be reconsidered. Applying the lessons learned in Afghanistan will allow combatant commanders to deploy smaller, highly skilled, specialized workforces, consisting of military and civilian personnel and contractors, almost anywhere in a theater to reconstitute forces; this capability, in turn, will permit commanders to redeploy forces with improved fighting capabilities to execute follow-on missions. The new AMC field units are a perfect source for these reconstitution efforts because they have the required personnel skill sets and, when necessary, can react to requirements with their unique reachback capabilities.

The Army is in a period of transition in its organization and doctrine. AMC is changing and evolving to meet these new requirements, pushing enabling capabilities forward in support of the warfighter as never before. The CJTF–76 reconstitution of forces in Kandahar shows what an AMC Army field support battalion can achieve. In this case, the truth is really in the numbers. **ALOG**

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'Climbing to Glory'—Logistics Task Force 548 in Iraq

BY CAPTAIN AMY B. SMITH, USAR

The 548th Corps Support Battalion, a unit of the 10th Mountain Division (Light Infantry) from Fort Drum, New York, was task-organized in support of Operation Iraqi Freedom 05–07 as Logistics Task Force (LTF) 548. The battalion deployed in September 2005 and was assigned to the 40th Corps Support Group, 3d Corps Support Command, at Logistics Support Area Anaconda, located in Balad, Iraq.

The battalion's mission was to support Multi-National Corps-Iraq by operating the major distribution activities at Logistics Support Area Anaconda, including the corps storage area, joint distribution center, central receiving and shipping point, two supply support activities, and the corps forward redistribution point. LTF 548 also provided responsive vehicle recovery, maintenance, water supply, and cargo-handling support through forward-echeloned teams operating at up to 15 forward operating bases throughout Iraq.

LTF 548 served as the command and control element for 11 units, including a direct support maintenance company, a general support supply company, a cargo transfer company, a water supply company, a water purification detachment, a field artillery battery, an ordnance company, a headquarters detachment, an aerial delivery platoon, and a mortuary affairs team. However, providing a full spectrum of logistics support in a combat environment was only the beginning of the LTF's mission. The LTF also was responsible for the safety and force protection of more than 1,100 troops from those units.

Soldiers from as far west as Guam and as far east as the Virgin Islands united to form LTF 548. Different components of the Army also united: three Active component, three Army National Guard, and five Army Reserve. The units of LTF 548 included—

- 548th Headquarters Detachment, from Fort Drum, New York.
- 21st Cargo Transfer Company, from Fort Lewis, Washington.
- 647th Aerial Delivery Detachment, from Fort Bragg, North Carolina.
- 610th Quartermaster Company, Army National Guard (ARNG), from the Virgin Islands.
- 641st Quartermaster Company, ARNG, from Ohio.
- B Battery, 5–113 Field Artillery Battalion, ARNG, from North Carolina.
- 322d Maintenance Company, U.S. Army Reserve (USAR), from Minnesota.
- 400th Quartermaster Company, USAR, from Kentucky.
- 909th Quartermaster Company, USAR, from Guam.
- 452d Ordnance Company, USAR, from South Dakota.
- 311th Mortuary Affairs Team, USAR, from Puerto Rico.

The mentality of "one team-one fight" was emphasized from the beginning; standards were the same across the board. All members of the task force learned the 10th Mountain Division motto on the first day in Iraq. A subordinate would say, "Support the Sword," while saluting a superior passing by or acknowledging that he understood an assigned task, and the superior would respond, "Climb to Glory." For the company commanders in the LTF, "Supporting the Sword" meant executing the task force commander's intent—"to maintain a mission-oriented environment always focused on providing consistent, world-class logistics support to customer units."

To accomplish this task, each unit needed to translate the idea of "consistent excellence" into specifics for its particular mission. Successfully doing this depended on two factors. The first was to make sure that the individual Soldier—the backbone of the task force—knew the purpose behind what he was expected to do and developed a sense of pride in unit accomplishment. The second, and more time-consuming, task was to improve the operations that the units fell in on—to make a lasting impression in the sand.

Every unit in LTF 548 supported the sword by improving the foxhole. The task force completed substantial mission-related infrastructure and force-protection improvements at major operational sites. Detailed accounts of these improvements can be found in the articles that follow on pages 21-39. The intent of these articles is to document the lessons learned by LTF 548 in providing a wide range of multifunctional logistics support to units across Iraq and to provide "blueprints" that other units might use if tasked with similar missions. **ALOG**

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Air Sustainment Operations at LSA Anaconda

BY FIRST LIEUTENANT BRIAN J. FURBER

At the beginning of our deployment to Iraq, my platoon, 3d Platoon, 21st Cargo Transfer Company, from Fort Lewis, Washington, was tasked to provide materials-handling equipment (MHE) support to the forward redistribution point (FRP) at Logistics Support Area (LSA) Anaconda near Balad. The mission of the FRP is to stock serviceable class II (clothing and individual equipment), IIIP (packaged petroleum, oils, and lubricants), IV (construction and barrier materials), and IX (repair parts) materials that are excess to 25 supply support activities (SSAs). In addition to MHE support, we also palletized a small amount of class II, IV, and IX supplies for movement by aircraft to airfields in Iraq.

Shortly after our transfer of authority, the air sustainment portion of our mission grew rapidly and became our main focus. The 3d Platoon Soldiers did not realize at first the tremendous importance of this new priority or the impact it would have throughout the theater, but we accepted the mission and worked many hours performing cargo-handler duties.

Air Sustainment

Air sustainment is the intratheater movement of supplies using Army or Air Force aircraft, versus transporting them by ground convoys. Moving cargo by air has two huge advantages over ground transportation. First, materiel usually arrives at its destination from 3 to 4 days faster. Second, Soldiers and equipment are not placed at risk by traveling on the dangerous roads of Iraq to deliver supplies.

After the 3d Platoon's rotation to Iraq began in October 2005, the emphasis on air sustainment increased theaterwide. Fewer than 4,000 pallets were shipped by air throughout Iraq in October 2005. Each month thereafter saw a notable increase in the number of pallets flown. During April, May, and June 2006, more than 48,000 pallets were moved by air. The two significant reasons for this increase were the implementation of the Air Force's hub-and-spoke system and the 3d Corps Support Command's emphasis on flying supplies—including many of the retrograde supplies going to Kuwait—whenever possible.

Pallets are transported not only on Air Force fixed-wing aircraft but also on Army rotary-wing aircraft, primarily CH–47 Chinook helicopters. These helicopters enable small forward operating bases that do not have landing strips to receive sustainment without having to cross-load supplies from air to ground conveyance. In March 2006, Chinooks delivered 52 pallets from LSA Anaconda. Three months later, that number had increased to an average of 244 pallets a month.

Reducing Customer Wait Time

The shift to flying sustainment instead of sending it by truck has drastically decreased the customer wait time for supplies ordered in theater. Instead of waiting for an entire convoy's worth of outbound cargo to accumulate for one location, regularly scheduled aircraft move pallets that are staged in the airfield's sterile yard.

The FRP further speeds up the delivery of supplies to the warfighter. Serviceable and unserviceable excess from all over Iraq is sent to the FRP, and items selected for retention are stocked there. When retention items are ordered by a unit in Iraq, the unit checks its SSA first and then the FRP. If the item is on hand at the FRP, it is sent by air directly to the unit. Having the item available for shipment from Balad instead of Kuwait drastically reduces the transportation time.

Convoy Mitigation

The greatest danger faced by U.S. service members in Iraq today is improvised explosive

Soldiers load a 463L cargo pallet onto a C–130 Hercules aircraft.

A soldier uses a 10,000-pound Atlas forklift to place a 463L pallet onto a trailer for transport. (Inset) A soldier secures the load on a 463L pallet.

devices (IEDs). Convoy mitigation provided by air sustainment is vital because it keeps Soldiers and materiel out of the reach of IEDs. For 16,000 pallets that are moved by air, 4,000 trucks of cargo and 800 convoy-protection or convoy-escort platforms are kept off the road. This keeps at least 5,200 Soldiers and civilians off the perilous roads of Iraq—a significant reduction in the risk to Soldiers, Sailors, Airmen, and Marines serving in Iraq. Air sustainment also keeps valuable equipment from being damaged or destroyed. For these reasons, air sustainment is a worthwhile endeavor.

Challenges

The 3d Platoon faced several challenges that made completing the air sustainment mission more difficult. These included overcoming a theaterwide shortage of 463L pallets, nets, and straps; getting cargo to the designated location; and obtaining hazardous materials (HAZMAT) certification.

Air sustainment requires the use of Air Force materials that are in limited supply throughout the theater, such as 463L pallet and net systems and 5,000-pound cargo straps. These items also are commonly misused. The 463L pallets often are used as makeshift flooring, and the cargo straps sometimes are used as troop straps for high-mobility, multipurpose, wheeled vehicles or 5-ton trucks. This misuse further diminishes the already-short supply of these items and hinders the overall mission.

As Coalition Force support to Iraqi Security Forces changes, we must ensure that cargo is shipped to the right destinations. If we are not getting the right cargo to the right unit at the right location, then the rest of the air sustainment process means nothing. Misshipped cargo then will have to be moved to the right location, possibly putting trucks on the road, or the items will be sent back to LSA Anaconda to be reprocessed. Either way, the customer's wait time will be drastically increased, possibly causing him to reorder the item.

The platoon experienced shipping delays early in the operation because it was unable to obtain HAZMAT certification. To solve this problem, another company in Logistics Task Force 548 allowed its HAZMAT specialist to move to the support operations office to provide HAZMAT certification to the FRP and

the Joint Distribution Center, LSA Anaconda's two highest-volume pallet producers. This effort made it possible for the platoon to send more items by air.

Joint Operations

Air sustainment is truly a joint operation. Without a close working relationship with the Air Force, air sustainment cannot be successful. We were told that the Air Force's position was "Build it, we'll fly it." As long as I have been working in air sustainment, the Air Force has always made good on that promise. Several times during our tour, the Air Force sent cargo experts to the FRP to train us on how to properly build and inspect 463L pallets. The experts did everything they possibly could to help us get the supplies we needed to build air pallets. Every week, our support operations transportation officer met with the other elements involved in air sustainment at the Air Terminal Operations Center of the 322d Expeditionary Logistics Readiness Squadron to iron out any issues and ensure smooth-flowing operations. This positive working relationship enabled our operation to be successful and was a great example of joint service partnership and "purple" logistics.

Soldiers in the 3d Platoon executed the air sustainment mission for nearly a year and had the chance to talk to many senior decisionmakers who visited the FRP to see their work. These Soldiers understood that they were not just building pallets. They were helping to safeguard the lives of their fellow Soldiers, and they were getting essential supplies and repair parts to the warfighter as fast as possible. They took great pride in the fact that their efforts significantly contributed to Balad leading the theater in cargo sent by air, and they felt a great sense of accomplishment at the end of each day. **ALOG**

First Lieutenant Brian J. Furber was the Platoon Leader for the 3d Platoon, 21st Cargo Transfer Company, at LSA Anaconda during his Operation Iraqi Freedom deployment. He is a graduate of the Officer Candidate School, the Transportation Officer Basic Course, the Psychological Operations Specialist Course, and the Basic Airborne Course.

Operating a Central Receiving and Shipping Point

BY FIRST LIEUTENANT BART S. LAJOIE

The experience of Logistics Task Force 548 in Iraq demonstrated that an inland cargo transfer company is well suited to run a central receiving and shipping point.

The central receiving and shipping point (CRSP) at Logistics Support Area (LSA) Anaconda was established to facilitate rapid onward movement of equipment and containers deploying to and redeploying from northern and central Iraq. The idea of a CRSP operating on the battlefield is new, but the concept is consistent with inland terminal operations and cargo transfer company (CTC) operations as discussed in Chapter 4 and Appendix C, respectively, of FM 55–1, Transportation Operations. CRSPs were established throughout Iraq to help control the flow of deploying and redeploying equipment by maintaining accountability and in-transit visibility (ITV). By having a central location where units can turn in equipment and containers before redeploying, the possibility of losing cargo during transit to its final destination is minimized. Mainly, CRSPs help answer the question many units ask: Where's my stuff?

Based on the experience of Logistics Task Force 548 at LSA Anaconda during Operation Iraqi Freedom 05–07, a CRSP yard must consider eight factors in order to be successful: terrain, container lanes, rolling stock lanes, ramps, lighting, perimeter security, command and control, and ITV.

Terrain

The planners of a CRSP must make an assessment that takes into account the amount of equipment to be throughput that will be processed in the area of responsibility. They also must allow for future development and expansion of the CRSP. The surface characteristics of the CRSP must be taken into account. The CSRP's surface must be able to accommodate the weight of a 120,000-pound piece of equipment, such as a rough-terrain container handler (RTCH). During the rainy season in Iraq, it is not uncommon to have a RTCH sink 2 or more feet in the mud. This becomes dangerous when moving a 50,000-pound container. To improve the terrain at LSA Anaconda's CRSP, more than 600 truckloads of gravel were spread over the entire area to create a hard surface on which to operate. This significantly improved the capabilities of RTCHs and facilitated all of the yard's operations.

Container Lanes

According to the Container Management Support Tool, the U.S. Government has paid over $500 million in detention fees on carrier-owned containers since the start of Operations Enduring Freedom and Iraqi Freedom. [The Container Management Support Tool is an integrated, Web-based theater container management database developed by the Military Surface Deployment and Distribution Command.] Every container moving north from the port in Kuwait into Iraq eventually must be retrograded south. A detention fee is charged to the Government for each carrier-owned container that is not returned to the carrier within a 10-day grace period. Because the detention fees charged for retaining carrier-owned containers in Iraq result in large costs to the Army, units exchange any carrier-owned and -leased containers they have for Government-owned containers at the empty container collection point at the CRSP. The CRSP then sends all carrier-owned or -leased containers to Kuwait, where they are returned to the company that owns them. This practice eliminates detention fees.

As units deploy and redeploy, their containers begin or end their movements at a CRSP. A yard must establish lanes to identify unit containers. One technique is to establish two lanes—one for inbound and one for outbound containers. All containers that have completed the final leg of their movement or are to be picked up at that CRSP are staged in the inbound lane. Containers that will continue their onward movement are staged in the outbound lane. This creates an organized format that allows for quick inventory and location of containers when they are scheduled for pickup or onward movement.

Rolling Stock Lanes

Rolling stock is treated the same as containers, with the exception that the outbound lane for rolling stock requires a much larger area. The vehicles are staged longer in the outbound lane because of the amount of time it takes for assets to be allocated for onward movement. Vehicles also require more room when they are staged in lanes. During a brigade combat

A rough-terrain container handler loads a local unit's container for delivery to its location. Central receiving and shipping points have the assets to support local units when their containers arrive in theater.

team relief in place, a large volume of the unit's equipment is staged in the yard while theater transportation assets are allocated. After the theater transportation assets move the deploying unit's equipment north, they will backhaul the redeploying unit's equipment.

During the transition of the 3d Infantry Division and the 4th Infantry Division in January 2005, over 4,200 pieces of rolling stock and containers were loaded and unloaded at LSA Anaconda's CRSP yard. This demonstrated why it is extremely important to have a yard large enough to accommodate such large numbers of vehicles.

Ramps

Most rolling stock arrives at a CRSP on flatbed trailers. The quickest way to unload rolling stock is by using ramps. One lesson learned in Iraq is that CRSPs should have ramps with two different heights. The height of military M871 (30 feet long) and M872 (40 feet long) trailers can be as much as 10 inches less than that of contractor flatbed trailers. If a CRSP only has a ramp for military-height trailers, dunnage can be used to make up the height difference so that vehicles can be safely loaded onto and unloaded from contractor trailers.

Lighting

Convoys often move at night, so the ability of CRSPs to conduct 24-hour operations is critical. When heavy equipment transporters enter the yard at night—and the tactical situation permits—lights are used at the ramp area and at the places in the yard where roll-on/roll-off procedures are used. Roll-on and roll-off are the most dangerous cargo transfer functions occurring in the yard. Without proper lighting, a risk assessment must be conducted to justify the risk of conducting roll-on/roll-off operations at night.

Perimeter Security

It is very important to have the capability to secure unit equipment and containers staged at a CRSP. When equipment or containers enter the yard, the officer in charge of the CRSP is accountable for them. Without some type of system in place to secure the perimeter, it is possible for equipment to be stolen or stripped for parts. Before a fence was erected at LSA Anaconda's CRSP, concertina wire and jersey barriers were placed around the perimeter. This was not the ideal deterrent, but it helped significantly to improve security.

Another approach to consider is establishing an entry control point (ECP), where personnel confirm what enters and exits the yard by communicating with the CRSP operations center by radio. The ECP also plays an important role in maintaining accountability and organizing cargo in the yard. When a convoy enters the CRSP, the ECP notifies the operations center to send an escort to stage the convoy in the appropriate staging area. It also stops traffic on the road outside the CRSP when a convoy leaves, allowing all convoy elements to depart the yard together. Combining an ECP, fence, and lighting creates a secure and functional CRSP yard.

A 40-ton crane is preparing to load 20 deadlined M932 5-ton trucks that were designated as excess equipment and part of the retrograde program in Iraq.

Command and Control

A well-established, functional operations center is the heart of the CRSP and must serve as the hub for all CRSP activity. All cargo entering and exiting the yard is processed and accounted for at this central location. The operations center must be immediately visible to the customer when he enters the yard. The customer, a unit representative, or the convoy commander should not have to search the yard looking for the operations center. The ECP personnel are responsible for directing everyone entering the yard to the center.

Most accounting for equipment takes place in the operations center. A database maintained there lists all loaded and unloaded equipment. Equipment staged in the yard is verified, ensuring that it is properly labeled with a transportation movement request (TMR) and radio frequency identification (RFID) tags. As a convoy uploads cargo, three copies of the TMR and manifest are given to the convoy commander. The information he receives identifies exactly what is being moved and where it is going. When the convoy arrives at its final destination, a copy of the documentation is given to the receiving CRSP's operations center.

Communication is a must when establishing command and control. Most CRSP yards are large, and the need for communication with the yard noncommissioned officer (NCO) in charge and key personnel is crucial. A CRSP must have communications equipment for the operations center, the ECP, and yard personnel. This greatly increases efficiency during uploading and downloading.

In-Transit Visibility

Movement control teams (MCTs) issue and track TMRs for all equipment moving into and out of Iraq. As CRSP personnel receive, inventory, and stage equipment, they verify the accuracy of assigned TMRs. This is the first step in creating ITV for the customer when he drops off his equipment.

Each CRSP must read and write RFID tags. Every piece of equipment leaving the CRSP must have an RFID tag. At the very least, the tag should have license plate data. Not every unit has the capability or know-how to write RFID tags; however, having an RFID writing capability in place at every CRSP yard would allow both the customer and CRSP personnel to find equipment during transit.

Typical CRSP Operations

Cargo arrival. When a convoy arrives to load or unload cargo, it is escorted immediately to a designated staging area. At a minimum, the CRSP yard should be set up to accommodate the staging of three separate 25-vehicle convoys simultaneously. This does not mean that all three must be worked on simultaneously, but there must be room to stage them. This is an important factor to consider during the CRSP planning phase, when a lot large enough for this type of operation must be selected.

Documentation. After a convoy is staged and the convoy commander has reported to the operations center with documentation for the load, a team is assigned to receive or unload the cargo and direct it, based on the documentation, to designated areas. This is where the lanes established in the yard come into play. As each piece is unloaded, an inventory is conducted. The information gathered includes cargo type, model, serial number, bumper number, container size, container number, and RFID tag number. This information then is confirmed with the TMR and manifest accompanying the equipment. After all data are verified, a signed copy of the TMR is handed over to the convoy commander for his records. All of the data on the equipment received are then entered into a database for inventory and tracking purposes. To ensure accuracy, a physical inventory of the yard is conducted daily to confirm the information in the database.

Cargo loading and departure. When a convoy arrives at the CRSP to upload cargo, it is processed

A convoy is loaded and ready to depart the central receiving and shipping point. The final task before the departure is to ensure that the convoy commander has all the proper documentation for the equipment he is hauling.

in the same manner as a convoy downloading cargo. The convoy is staged, and the convoy commander reports to the operations center with documentation of the cargo he is moving. After verifying that the cargo is in the yard, a team is sent out to load the equipment. As the equipment is loaded, another team conducts an inventory based on the TMR. The team verifies vehicle serial numbers and container numbers. After the convoy is completely loaded and staged for departure, the convoy commander is given three copies of the TMR and manifest of the load. The CRSP representative annotates the convoy's name, unit, and convoy number into the database for future reference.

ITV. Every day, a CRSP sends a report to the Highway Traffic Division, MCTs, corps support groups, and sustainment brigades to provide them with visibility of all equipment in the yard. This report is used for planning future convoys that will move the cargo at the CRSP to its final destinations. The report describes equipment and containers that entered the yard in the last 24 hours, equipment in the yard still awaiting transport, and equipment that left the yard in the last 24 hours. This report also acts as another form of ITV. Units can track their cargo by the reports sent up to the corps support command (COSCOM) that are posted on the COSCOM Secure Internet Protocol Router Network (SIPRNet) Web site. Each of the nine CRSP yards in Iraq sends its inventory reports to the COSCOM daily, which enables customers to track their equipment using current information. If customers without SIPRNet capabilities are looking for their equipment, they can go to their CRSP and have them pull up each of the other CRSPs' reports to see where it might be.

Another report used by a CRSP is the Container Management Support Tool, which is used to track containers as they move within the theater. As a container enters or leaves a CRSP yard, the container number is updated with its current location or destination on the Container Management Support Tool Web site. This is an ongoing process since containers are constantly moving.

Training. Properly trained Soldiers and materials-handling equipment (MHE) operators are essential to conducting successful CRSP operations. In Iraq, some of the CRSP yards are supported by a CTC platoon, while others are augmented by contractors and Soldiers with varied military occupational specialties (MOSs). A CTC has all the muscle and equipment to make this mission run efficiently.

Inland Cargo Transfer Company

Under its current modification table of organization and equipment (MTOE), a CTC has the ability to conduct both port and inland operations. In fiscal year 2007, the CTC MTOE will change to focus CTC operations away from seaports. This is where the concept of an inland cargo transfer company (ICTC) originates. CTCs have Soldiers trained to operate the MHE and ITV equipment needed at a CRSP. The ICTC will operate only inside a theater of operations.

ICTC suitability for CRSP operations. When the first CRSP in Iraq was established in December 2004, it was operated by an MCT with contractor support. As the CRSP developed, it became obvious that an MCT did not have the personnel or muscle to sustain the requirements demanded by a high operating tempo. While an MCT is composed predominantly of transportation management coordinators (MOS 88N), an ICTC has several different types of trained Soldiers, making it the perfect unit to operate a CRSP. For these reasons, a CTC platoon assumed the operation of LSA Anaconda's CRSP in December 2005.

ICTC personnel breakdown. The ICTC consists of two line platoons, one maintenance platoon, and one headquarters platoon. The line platoons include Soldiers with three MOSs: 88H, 88M, and 88N. Motor transport operators (MOS 88M) can operate nearly every piece of rolling stock entering the yard during loading and unloading procedures. Cargo specialists (MOS 88H) are required to operate forklifts and RTCHs; they load and unload all containers with RTCHs and use forklifts to transload small rolling stock and pallets.

The main function of a transportation management coordinator is to communicate with the MCTs and the Highway Traffic Division. Both agencies identify which TMRs are loaded on convoys. It is the 88N's job to ensure that convoys are loaded with the appropriate TMR and that all documentation is handed over to the convoy commander. The 88N is accountable for every piece of cargo in the yard. He also must focus on writing RFID tags for equipment that arrives at the CRSP without such tags. As the 88Ms and 88Hs are the muscle to operate the yard, the 88Ns are responsible for the operational functions of the yard. It is not uncommon to cross-train these personnel to maximize everyone's potential and ability.

ICTC equipment breakdown. The equipment in an ICTC platoon varies slightly from that in a CTC platoon. The ICTC platoon has eight load-handling systems (LHSs) and four container-handling units (CHUs), compared to two LHSs and one CHU in the CTC platoon. Both CTC and ICTC platoons have four RTCHs, but the ICTC platoon has eight 10,000-pound variable-reach, rough-terrain forklifts compared to the four in the CTC platoon. Each still has

four 4,000-pound forklifts and two yard-dog trucks. The ICTC has the ability not only to operate the CRSP but also to assist local units by delivering and picking up their cargo. This minimizes the amount of cargo remaining in the yard for extended periods of time while the owning unit tries to coordinate for local assets to assist them in moving it.

The significant difference between the two MTOEs is the loss of a 40-ton crane that the ICTC is no longer authorized. The crane is a valuable asset during CRSP operations. A considerable amount of rolling stock needs to be downloaded and uploaded by crane. Because of the threat posed to Army convoys by improvised explosive devices, many battle-damaged vehicles must be uploaded using a crane. Removing the 40-ton crane from the ICTC MTOE means that an ICTC must coordinate with engineer units or contractors to complete its mission. The LSA Anaconda CRSP moved approximately 20 to 25 pieces of cargo by crane each week; without a crane on site, the time required to complete uploading and downloading equipment increased dramatically. Further consideration should be given to the need for the 40-ton crane before the official MTOE for the ICTC is approved.

The capabilities offered by a CRSP are very important in the overall planning and establishment of an inland operation. After 3 years in Iraq, the Army's leaders are still fine-tuning this concept. With the help of each CRSP officer and NCO in charge, the lessons learned are helping to develop a plan for the next operation. Ensuring that an ICTC platoon operates a CRSP yard is the first step toward ensuring success—getting the right equipment, to the right unit, at the right location and time. We at the 2d Platoon of the 21st Cargo Transfer Company experienced great success, and we hope that, by using our template, others might enjoy the same success. **ALOG**

First Lieutenant Bart S. Lajoie is a platoon leader in the 21st Cargo Transfer Company, 44th Corps Support Battalion, at Fort Lewis, Washington. While deployed at Logistics Support Area Anaconda, he was the officer in charge of the central receiving and shipping point from December 2005 to October 2006. He is a graduate of the Officer Candidate School and the Transportation Officer Basic Course and currently is enrolled in the degree completion program at the University of Washington at Tacoma.

Deploying and redeploying armor units occupy large portions of the staging area while awaiting pickup by a unit or a convoy.

LSA Anaconda's Forward Redistribution Point

by First Lieutenant Theodore C. Mataxis III, USAR

Operating the Logistics Support Area (LSA) Anaconda Forward Redistribution Point (FRP) was the primary mission of the 400th Quartermaster (QM) Company during its Operation Iraqi Freedom deployment. The 400th QM Company, which falls under the Army Reserve's 81st Regional Readiness Command and is based in Maysville, Kentucky, was one of eight companies within Logistics Task Force 548.

The FRP serves as an intermediary, multiclass serviceable excess storage and redistribution point between outlying forward operating bases and the theater distribution center in Kuwait. The purpose of the FRP is twofold: convoy mitigation and reduction of customer wait time.

During Operation Iraqi Freedom 1, units sent excess supplies to the theater distribution center in Kuwait. In April 2004, the 13th Corps Support Command noted that excess supplies were leaving Iraq and entering Kuwait, only to be turned around and used to fill a requisition for another supply support activity (SSA) in Iraq. Implementing the FRP in July 2004 reduced the flow of serviceable excess retrograding south and allowed customer SSAs to get needed supplies faster.

Soldiers from the 400th Quartermaster Company and Kellogg, Brown, and Root contractors process parts in a receiving lane. The receiving section processed an average of 1,200 receipts daily.

Concept of FRP Operations

Centrally located in Balad, Iraq, the FRP receives serviceable excess equipment turned in by SSAs and forward operating bases in northern and central Iraq. When an SSA submits a requisition, the Standard Army Retail Supply System (SARSS) automatically checks the on-hand balance of the FRP before searching the theater distribution center in Kuwait and depots in Germany and the continental United States. If the needed materiel is in stock at the FRP, the unit that placed the requisition receives the materiel faster and Soldiers and contractors are not required to drive on Iraq's dangerous main supply routes to transport the items from Kuwait to Iraq.

The concept of the operation is simple. Excess materiel turned in by a traditional SSA goes directly to the FRP. The excess class II (clothing and individual equipment), IIIP (packaged petroleum, oils, and lubricants), IV (construction and barrier materials), and IX (repair parts) materiel is processed and stored as one of the FRP's 14,400 retention lines. The need for the lines is determined by an annual retention analysis based on demands in the Iraqi theater. The on-hand balance of materiel and the amount maintained of each particular class are determined strictly by what supported SSAs turn in as excess. The FRP stores mostly class IX (which make up 75 percent of the total lines with on-hand balances). This is followed by class II (18 percent), class IIIP (5 percent), and class IV (2 percent). The materiel is stored until requisitions are received from SSAs that need it for their supported units.

Materiel release orders (MROs) are received eight times daily from the 321st Theater Materiel Management Center's Corps/Theater Automated Data Processing Service Center (CTASC) at Redstone Arsenal, Alabama. Once referrals are printed, supplies are pulled and shipped to customer SSAs throughout Iraq. The footprint of shipments covers the entire battlefield, supporting 23 of the 25 SSAs in Iraq.

Challenges

Even though the concept is simple, the operation faces challenges. Most of the excess received (both new and used) is properly marked with paperwork and shipped according to Army standards. However, up to a third of the materiel arriving at the FRP is frustrated cargo or supplies shipped directly from units without paperwork or proper blocking and bracing. This materiel has to be identified before it can be reissued. The materiel is inspected first to determine its serviceability. If it is deemed serviceable, the FRP conducts research to determine the item's national stock number (NSN) before it can be processed in SARSS–1. All materiel must be processed in SARSS–1 and reported to SARSS–2A before the CTASC can gain visibility of it.

To address growing concerns about improperly shipped materiel, the 400th QM Company, Logistics Task Force 548, and the 3d Corps Support Command drafted a theater-wide fragmentary order addressing shipping standards for SSAs in the Multi-National Corps-Iraq area of operations. Although the situation improved, the FRP continues to receive unserviceable materiel. The condemned, unserviceable materiel (condition code H) is sorted and forwarded to the Defense Reutilization and Marketing Office. Materiel that is unserviceable but possibly reparable (condition code F) and materiel that does not have a traditional stock number is forwarded to the serviceable/unserviceable yard in Arifjan, Kuwait.

This container is one of many that entered the forward redistribution point without proper paperwork or blocking and bracing.

Daily Operations

The FRP is divided into four sections. The receiving section faces the everyday challenge of sorting serviceable materiel from unserviceable, identifying the NSNs of materiel that arrives without paperwork, and identifying frustrated cargo that needs to be forwarded to other units. On average, the FRP receiving section processes 1,200 receipts daily. Despite all these responsibilities, the 400th QM Company receiving section was able to reduce the 210 463L pallets and 185 containers of backlog to a zero balance in January 2006.

The storage section is responsible for over 7,400 lines valued at $25 million. Because of the high turnover of different items, the storage section must conduct detailed location maintenance, surveys, and location add/delete discipline while pulling an average of 700 MROs daily.

The shipping section pushes an average of 1,100 MROs daily (both referrals to customers and excess materiel to Kuwait). Once an MRO is received from the CTASC, the shipping section has the item ready for shipment in 24 to 36 hours. This is no easy achievement, considering all the steps required before an item is shipped. The item must be secured and placarded with the SSA's Department of Defense Activity Address Code, and, most important, the radio frequency in-transit visibility (RFITV) team has to write a level-six RF tag that is attached to the load.

The stock control section is responsible for managing the warehouse and stock record receipt, storage, distribution, and issue functions and maintaining equipment records and parts. Job responsibilities include posting receipts and turn-ins, preparing accounting and supply reports, conducting visual inspections, and processing surveys and inventories.

Larger items are stored in a bulk yard like this one.

Within the four sections are specialty teams, such as the Container Management Support Tool team, container processing team, frustrated/research team, unknown team, quality assurance/quality control team, and RFITV team. The RFITV team is one of the most important teams within the entire operation. A level-six detailed RF tag consists of the referral document number, NSN, item nomenclature, quantity, consignee, and consigner. The purpose of an RF tag is intratheater visibility. Once the referral is shipped, the customer can log onto the RFITV site and type in the referral document number to view the last "pinged" location of that tag. This technology gives customers an added sense of security that the needed materiel is en route to their locations.

Although the 400th QM Company did most of the heavy lifting during daily operations while it ran the FRP, they could not have done it alone. They worked with the 21st Cargo Transfer Company, which operated materials-handling equipment and built air sustainment pallets for onward movement to customers. Kellogg, Brown, and Root contractors also provided augmentation in all sections. Today, the FRP is a collaborative effort that runs 24 hours a day, 7 days a week, to distribute needed supplies throughout Iraq and Kuwait.

The FRP saves lives, both directly and indirectly. Directly, it reduces the number of Soldiers and civilians driving on main supply routes to deliver sustainment to Iraq from Kuwait. In fact, from October 2005 though July 2006, the FRP prevented an estimated $150 million ($125 million in referrals shipped and $25 million stored) of excess retrograde from leaving Iraq. Indirectly, it provides units sustainment faster to ensure mission readiness. In 2006, class IX requisition wait time within Iraq was reduced to an all-time low of 12 days—40 percent below the Army standard of 20 days. The decrease in requisition wait time can be attributed partly to the success of the FRP. **ALOG**

First Lieutenant Theodore C. Mataxis III, USAR, is the Executive Officer of the 824th Quartermaster Company (Aerial Delivery) at Fort Bragg, North Carolina. While deployed in support of Operation Iraqi Freedom 05–07, he served as the Accountable Officer for the forward redistribution point located at Logistics Support Area Anaconda. He has a bachelor's degree in sociology and criminology from the University of North Carolina at Greensboro and a master's degree in clinical psychology from North Carolina Central University. He is a graduate of the Quartermaster Officer Basic Course, the Airborne School, and the Parachute Rigger School.

Mortuary Affairs Facility Improvements at LSA Anaconda

BY FIRST LIEUTENANT TRACIA PICHOTTA, USAR, AND CAPTAIN DAVONNE L. BIVINS

Since the early 1800s, the Quartermaster Corps has provided critical mortuary affairs support to military operations. The mortuary affairs mission is to find, recover, identify, and repatriate our fallen comrades, ensuring that the deceased are properly cared for and returned to their families in a timely manner. The 311th Mortuary Affairs Team, 400th Quartermaster Company, Logistics Task Force (LTF) 548, in Balad, Iraq, continued the legacy of the Quartermaster Corps' mortuary affairs mission during their deployment to Operation Iraqi Freedom 05–07. The team members operating the Logistics Support Area (LSA) Anaconda Mortuary Affairs Collection Point (MACP) took great pride in their service to their fellow service members and their country.

The MACP at LSA Anaconda has been in place since the beginning of Operation Iraqi Freedom. The original site consisted of a processing tent, refrigerated trailers for storage, and trailers for quarters located close to the flight line and the LSA Anaconda hospital. Over the years, several improvements were made to the site.

> Show me the manner in which a nation or a community cares for its dead and I will measure with mathematical exactness the tender sympathies of its people, their respect for the laws of the land and their loyalty to high ideals.
>
> —William Ewart Gladstone

In January 2006, LTF 548 began planning to relocate and expand the team's operational area. The LFT 548 and Air Force engineers worked together to complete this project. The Air Force began construction of a new mortuary affairs processing building in February, and the new MACP site became fully mission capable on 13 April. The new location offers the following advantages to the team—

- Close proximity to the flight line and hospital.
- Increased force protection and a secure entrance.
- Improved sanitation resulting from permanent plumbing.
- Increased space for operational and living areas.
- Concrete floors and sidewalks.

The new mortuary affairs collection point at LSA Anaconda provides workers increased force protection, improved sanitation, and increased operational and living space.

Additional improvements to the site to enhance operational capabilities and the infrastructure completed by the 400th Quartermaster Company included the addition of a housing area for escorts and a recreational area for the team since its personnel rarely leave the site because of the demands of the mission. The mortuary affairs team also implemented a new system for tracking remains and personal effects from the theater to their final destination, using a barcode system and in-transit visibility.

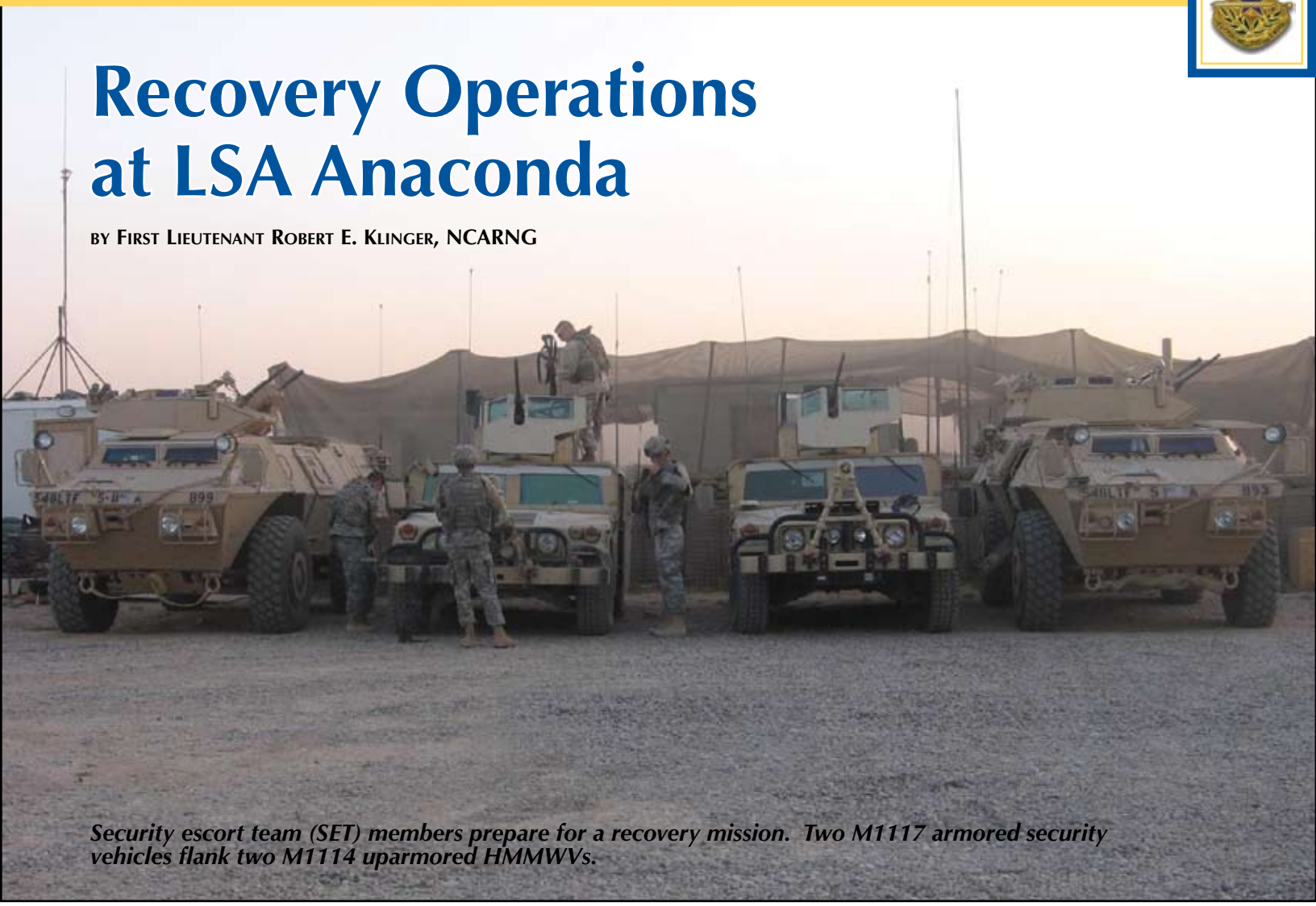
During its tenure, the 311th Mortuary Affairs Team provided care of their fallen comrades on the frontlines with world-class honor, dignity, and respect. **ALOG**

FIRST LIEUTENANT TRACIA PICHOTTA, USAR, SERVED ASTHE OFFICER IN CHARGE OF THE MORTUARY AFFAIRS COLLECTION POINT WHILE DEPLOYED WITH LOGISTICS TASK FORCE 548 TO IRAQ. SHE HAS A BACHELOR'S DEGREE IN CRIMINAL JUSTICE AND A MASTER'S DEGREE IN CORRECTIONS AND JUVENILE JUSTICE FROM EASTERN KENTUCKY UNIVERSITY.

CAPTAIN DAVONNE L. BIVINS IS A STUDENT IN THE COMBINED LOGISTICS CAPTAINS CAREER COURSE. SHE WAS THE SUPPLY AND SERVICE OFFICER IN CHARGE FOR LOGISTICS TASK FORCE 548 DURING ITS DEPLOYMENT TO OPERATION IRAQI FREEDOM. SHE HOLDS A B.S. DEGREE IN BIOLOGY FROM THE UNIVERSITY OF WEST GEORGIA AND IS A GRADUATE OF THE QUARTERMASTER OFFICER BASIC COURSE.

Recovery Operations at LSA Anaconda

BY FIRST LIEUTENANT ROBERT E. KLINGER, NCARNG



Security escort team (SET) members prepare for a recovery mission. Two M1117 armored security vehicles flank two M1114 uparmored HMMWVs.

The call comes in to the battalion from the "Sheriff's Net" [the emergency radio frequency]. Another improvised explosive device (IED) has detonated, leaving two vehicles damaged and inoperable. Knowing that time is critical, the members of the battalion tactical operations center (TOC) quickly take action. Their first call goes out to the battalion recovery team. This team is composed of personnel from the security escort team (SET) and several Kellogg, Brown, and Root (KBR) recovery vehicle operators. The recovery team arrives at the TOC just as the battle noncommissioned officer (NCO) finishes collecting all the information essential to the success of the mission. The team leaves the TOC and arrives at the recovery site, where their first order of business is setting up security around the disabled vehicles. Once security has been established, the KBR team moves in and loads up the damaged vehicles. With equipment in tow, the SET and KBR personnel drive back to base. The recovery team has accomplished its missions—to recover disabled vehicles and keep the roads open.

This scenario was repeated many times during the yearlong deployment of Logistics Task Force 548. The headquarters element that provided all the vital information was the 548th Corps Support Battalion, a 10th Mountain Division (Light Infantry) unit from Fort Drum, New York. The battalion was task-organized in support of Operation Iraqi Freedom 05–07 as Logistics Task Force (LTF) 548. It was the command and control element for eight companies. One of those companies was B Battery, 5th Battalion, 113th Field Artillery Regiment, a National Guard unit from Winston-Salem, North Carolina, that began performing recovery and SET missions in December 2005.

Gathering Information

LTF 548 became accustomed to sending out SETs, but how did they know which recovery assets were needed and where to dispatch them? B Battery obtained this information either when it was contacted by the 40th Corps Support Group or by monitoring the Sheriff's Net. The TOC used both avenues of

information to ensure that the SET got all vital information in a timely manner. This information, which was so vital to the mission, came from the 101st Airborne Division's Secret Internet Protocol Router Network (SIPRNet). The LTF S–3 section monitored the 101st SIPRNet 24 hours a day, 7 days a week, for any significant activities in order to ensure that the teams received the latest intelligence. This intelligence consisted of a strip map and the latest IED and enemy activity information. This information was not only important for accomplishing the mission but also for ensuring the safety of the recovery team members. The recovery teams had a 100-percent success rate, even when the disabled vehicle belonged to the recovery team.

Team Protection

In Iraq, a recovery mission is not just about leaving the secured area, recovering a disabled vehicle, and returning to base. It has become more of a combat mission than a support mission. On several occasions, the SETs have taken direct fire (small arms) and indirect fire (mortar). "We drive out to a site, set up, and pull security while KBR hooks up the (disabled) vehicle. More time, than not, we can roll back without further incident, but sometimes things happen," said Master Sergeant Joey Ireland, B Battery platoon sergeant, who has seen the power of an IED first hand. The composition of the SETs and the equipment in the convoy protection platforms (CPPs) are imperative to recovery mission success.

The recovery team was composed of four CPPs: three M1117 armored security vehicles and one M1114 up-armored high-mobility, multipurpose, wheeled vehicle (HMMWV) that was used primarily as the command and control vehicle. The vehicles were equipped with all of the equipment needed to survive while driving the IED-laden roads around LSA Anaconda. This equipment included extra lights mounted on the vehicles and horns; some of the vehicles even had sirens. The most significant vehicle upgrades were found inside with the tools that help save lives on the recovery missions—Blue Force Tracker (BFT) and the Movement Tracking System (MTS).

Air support could be a valuable ally for the SETs. However, it was seldom available. Although it was an effective deterrent to both direct and indirect fire, it was seldom possible to obtain. Only about 4 percent of the recovery missions were covered by air support.

LTF 548 used MTS and BFT to monitor recovery missions. MTS and BFT use state-of-the-art technology and satellite linkup to provide up-to-date information to the battalion and battery operations centers (BOCs). According to Sergeant First Class Thomas Camus, B Battery platoon sergeant and communications sergeant, the systems are similar. "Both use satellite to relay signals from base to vehicle, which allows the SETs to communicate digitally and receive the most up-to-date-data. However, the MTS and the BFT cannot communicate with each other." Camus added, "I wouldn't leave the wire without either one."

Area of Operations

LSA Anaconda is the primary logistics support base in Iraq. Located near the town of Balad, just north of Baghdad, it is spread over 15 square miles. The base is home to approximately 25,000 Soldiers, Airmen, Marines, and civilians. The base has two runways and is the busiest airport in Iraq. LSA Anaconda directly supports all surrounding forward operating bases with personnel, equipment, and logistics support. B Battery was responsible for the recovery of any inoperable vehicle within a large radius of LSA Anaconda. To ensure that all inoperable vehicles that fell within that radius got assistance as quickly as

A SET member provides security for Kellogg, Brown, and Root personnel recovering an overturned vehicle.

possible, LTF 548 ran operations 24 hours a day, 7 days a week. Response time was usually 25 to 30 minutes.

LTF 548 was not the only unit monitoring the recovery mission. B Battery also monitored the recovery mission. Two huge maps hung on the wall of B Battery's operations center—one of the areas in which the battery was responsible for recovery, the other of the entire country. The map of LSA Anaconda had markings of checkpoints and the latest IED information obtained from LTF 548. The operations center used this information to notify the SETs if they were entering a trouble area. The operations center used MTS, BTF, and the Single-Channel Ground and Airborne Radio System (SINGARS) to track each mission.

To decrease the time from getting the call to leaving the gate, the SETs stayed in the battalion housing area, which was made up of several containerized housing units, when they were the primary recovery team. Having the SETs housed in the battalion housing area lowered the team's response time.

Many civilians had important roles at LSA Anaconda. KBR drivers drove the vehicles used in towing all disabled vehicles within LTF 548's area of operations. The KBR recovery team had two vehicles—a wrecker and a heavy equipment transporter (HET). The KBR recovery team drivers stayed in the containerized housing units with the other members of the recovery team. This reduced the recovery response time by as much as 30 minutes. According to Sergeant First Class Jerry Jones, B Battery platoon sergeant, "They are the ones who are at the most risk when we get to the site. They are concentrating on recovering the vehicle, not about how exposed they truly are. They are the ones that get dirty and greasy during a recovery. We supply protection in order for them [KBR] to do it as quickly and safely as possible."

An important logistics operation that the recovery teams depended on was provided by the maintenance support section. This section provided the service and maintenance for the CPPs. An important aspect of maintenance was ordering and maintaining a parts supply, which presented a challenge because the vehicles being maintained were different from those the unit used at home station. Despite this, the maintenance section maintained a greater than 98-percent operational readiness rate while in theater.

The success of LTF 548 and B Battery, 5th Battalion, 113th Field Artillery Regiment, cannot be summed up in simple words. The truth, as they say, is in the pudding: LTF 548 executed 180 successful recovery missions in which they returned with 100 percent of the vehicles they were sent to recover. All missions were executed with minimal damage to the recovery vehicles and no fatalities to the recovery personnel. In the end, that is what really matters. **ALOG**

First Lieutenant Robert E. Klinger, NCARNG, was the 3d Platoon Leader and 3d Security Escort Team Convoy Commander for B Battery, 5th Battalion, 113th Field Artillery Regiment, during his rotation to Operation Iraqi Freedom. He has a bachelor's degree from Kutztown University of Pennsylvania and is a graduate of the Field Artillery Officer Basic Course.

B Battery SET members provide security while an explosive ordnance disposal team prepares to clear an improvised explosive device. Note the robot on the road that will be used to help clear the IED.

Providing Clean Water to the Soldier

BY FIRST LIEUTENANT MICHAEL KETCHAM, OHARNG

In the arid environment of Iraq, National Guard units are meeting the Army's need for the most basic supply of all—clean water.

Outside the wire, the berm has been leveled to prevent erosion. Equipment is lined up to maximize efficiency and reduce the amount of hose needed.

Water purification units still exist in the military. Although not used as widely as they once were, water purification units still can provide potable water within a theater of operations. Drinking water—often provided in the form of bottled water—is the most important use of potable water, but showers, laundries, and dining facilities also need a lot. At Logistics Support Area (LSA) Anaconda in Balad, Iraq, the 641st Quartermaster Detachment teamed up with the 909th Quartermaster Detachment to purify water and with the 610th Quartermaster Company to distribute the resulting clean water. All of these units are Army National Guard units: the 641st from Ohio, the 909th from Guam, and the 610th from the Virgin Islands.

On arrival, the 641st and 909th were thrilled to have a mission for which they had trained back home. They immediately went to work purifying as much water as they could. However, the condition of the site and equipment at LSA Anaconda was not what they had expected. The water site at LSA Anaconda was located along the fence line and completely open. The ground was muddy and saturated with water, causing some equipment to sink and lean to one side. To resolve these problems, an engineering company was contracted to dig up the mess and lay a solid base of gravel that would help disperse the water that constantly drained out of the reverse osmosis water purification units. To provide force protection, T-walls were placed along the fence. The units' mechanics then began the long and strenuous job of repairing equipment to bring it to the proper Army standards.

Outside the fence, a small berm separated LSA Anaconda and a manmade concrete canal that branched off the Tigris River. The berm was beginning to erode and wash down into the water, which caused more problems with the water purification equipment as it tried to filter and clean the dirty water. So another contract was set to level the berm and lay a gravel base to prevent further erosion.

While all the site improvements were being made, the 641st and 909th Quartermaster Detachments continued to purify water. During the winter months of 2005 to 2006, the temperature of the water dropped to near freezing. At these low temperatures, the civilian contractors had trouble meeting the demand for water supply, so they called on the military to boost production. Operating with two shifts running 12 hours each, the 641st and 909th produced over 5 million gallons of water in less than 3 weeks. The maintenance section continued to improve the water purification equipment despite the aggressive production schedule.

From the beginning, the detachments not only operated at LSA Anaconda but also sent four separate teams to forward operating bases (FOBs). All of the Soldiers on each FOB relied on the small water purification team to provide them water for showers and food. After a long day outside the wire, these warfighters came back to the FOB looking for a shower and hot food. Without fresh, potable water, they would have been disappointed and these basic needs would not have been met.

Some teams at these FOBs purified water from streams, while some purified water from a well. They had to maintain water purification equipment themselves, or wait until a mechanic could be sent from LSA Anaconda. Because of the remote locations of some of the FOBs, it sometimes took several days to send supplies or mechanical help. Some FOBs also were more susceptible to attacks from insurgents. Improvements to water sites at these FOBs therefore were a must for the Soldiers' welfare. HESCO barriers and T-walls were put up to protect equipment and water bags, and bunkers were erected to provide protection for personnel. Some FOBs even consolidated their U.S. and Coalition Forces areas, giving the rest of the FOB to the new Iraqi Army. In these cases, the water site was located in the Iraqi Army section of the FOB and the water purification team had to learn to deal with the Iraqi Army and the language barrier.

The 641st and 909th Quartermaster Detachments produced over 62 million gallons of potable water for LSA Anaconda and all remote locations. However, civilian contractors slowly are assuming the entire water operation at LSA Anaconda and even at a few of the FOBs. The ultimate goal is to let civilian contractors purify all the water. **ALOG**

First Lieutenant Michael P. Ketcham, OHARNG, was the Water Purification Platoon Leader for the 641st Quartermaster Detachment at Logistics Support Area Anaconda in Balad, Iraq. He has a B.S. degree in accountancy from Wright State University and is a graduate of the Quartermaster Officer Basic Course.

Two Soldiers of the maintenance section fix a high-pressure pump on one of the 3,000-gallons-per-hour ROWPUs.

At Forward Operating Base Gabe, a sergeant of the 641st Quartermaster Detachment distributes water to a KBR contractor. Trucks pull up to the distribution site and honk their horn for service.

After the engineers laid a solid base of gravel, the 3,000-gallons-per-hour reverse osmosis water purification units (ROWPUs) were placed on skids and protected by concrete barriers.

Supplying Ammunition at LSA Anaconda

BY FIRST LIEUTENANT TAMERA A. GRESHIK, USAR

The 452d Ordnance Company is an Army Reserve unit based in Aberdeen, South Dakota, a small town nestled in the northeast part of the state. The Soldiers of the unit call 13 states home; company personnel come from California, Colorado, Florida, Minnesota, Montana, Nebraska, North Dakota, Oregon, South Dakota, Texas, Washington, West Virginia, and Wyoming. In 2005, they assembled at Fort Riley, Kansas, to begin an 18-month adventure.

Operating the Corps Storage Area

The company's arrival at Logistics Support Area (LSA) Anaconda in Balad, Iraq, in October 2005 was an exciting time. It was, after all, a new place with new people and a new mission. We were to provide ammunition support to coalition and joint forces in the Iraqi theater by operating the corps storage area (CSA). Instead of only issuing containerized, bulk shipments to ammunition supply points (ASPs) that, in turn, would issue the ammunition to customer units, we would be issuing ammunition directly to using units, ammunition transfer holding points, and ASPs throughout the theater. We were tasked to conduct ammunition operations for over $360 million worth of ammunition while emphasizing safety, accountability, equipment maintenance, and operational efficiency.

That initial burst of enthusiasm was soon challenged by the realization that we were one full platoon (44 Soldiers) smaller than the unit we were replacing. We also realized that the equipment we would inherit—over 200 pieces of rolling stock and materials-handling equipment, twice the number authorized by the modification table of organization and equipment—was in need of annual services and operator-level maintenance.

During the relief-in-place and transfer-of-authority process, we identified several areas that needed immediate attention and developed a plan of action. When we assumed the mission, the CSA was operated more like an ASP (issuing ammunition directly to the customer) than a CSA (issuing ammunition to the ASP that, in turn, issued the ammunition to the customer). The amount of ammunition managed was so large that the CSA was located at two separate locations at LSA Anaconda. The challenges of inventorying, accounting for, and managing the over $360 million worth of ammunition dispersed over the two locations immediately became apparent. Other areas of concern included the lack of experienced Standard Army Ammunition System-Modernization (SAAS–MOD) operators, the introduction of unique equipment such as family of medium tactical vehicles (FMTV) trucks, and the need for force protection updates at both ASPs.

With less than 60 days on the ground, the CSA experienced a SAAS–MOD system crash that could have put operations weeks behind and greatly hindered our ability to support customer units. A meticulous process to replace and rebuild the entire system was initiated and accomplished within 24 hours, bringing the CSA back on line without a single customer noticing a difference in the service provided.

Managing Ammunition

To raise operation standards from Operation Iraqi Freedom (OIF) II to OIF 05–07 standards, we rewarehoused all stocks within the CSA. This improved the

At the beginning of the 452d Ordnance Company's ammunition supply point (ASP) renovation project in Iraq, this area was used as a guard post for the ASP.

This photo shows the ammunition maintenance area in place when the 452d Ordnance Company arrived in Iraq. Here, Soldiers inspected, cleaned, and repacked ammunition for distribution throughout the theater, storage, or destruction. The HESCO barriers in the foreground have since been replaced with steel revetment barriers.

overall accountability and safety of munitions that were dispersed over two ASPs. The rewarehousing process successfully identified, consolidated, and stored items with more than 370 different Department of Defense Identification Codes (DODICs), spread out in more than 700 containers, to peacetime compatibility standards. Over a 10-month period, 677 inventory site visits were completed during 3,913 transfers between depots to correct discrepancies dating back to OIF III. The inventory team conducted a 100-percent inventory of all stocks within the first 4 months of the tour, which exceeded the Army regulatory requirement of 10-percent monthly cyclic inventories by 60 percent. This aided in the proficiency, accountability, and safety of ammunition operations.

Managing Personnel

Managing ammunition stocks was only one challenge to our mission. The second half of the equation was the management of personnel. A carefully orchestrated continuity of effort among five different groups equally dedicated to the mission of the CSA was vital. Personnel from the 452d; Kellogg, Brown and Root; the 21st Cargo Transfer Company; the 610th Quartermaster Company; and civilian quality assurance specialists (ammunition surveillance) supported the CSA, providing materials-handling equipment support, force protection, and ammunition surveillance. The success of this continuity can be verified through the monthly average movement of more than 314 tons, or more than 1,662,903 rounds, valued at roughly $12,879,624, to the ASP in Q-West supporting the 101st Airborne Division (Air Assault) and the monthly average movement of 1,376,993 rounds, valued at $1,633,551, to the Ridgeway ASP supporting the II Marine Expeditionary Force. Tallil ASP supported units in southern Iraq with a monthly average of 2,482,126 rounds valued at $816,302, and our largest customer, the 4th Infantry Division in the Baghdad area, received a monthly average of 3,012,509 rounds valued at $23,723,082. This success took place while we simultaneously coordinated condition code H (salvage and free issue) munitions for demilitarization.

Improving the CSA

By assessing procedural shortcomings and implementing changes to the basic load ammunition holding area, we improved customer support, accountability, and safety. A simple change to the standing operating procedures ensured that customer units would continue to have uninterrupted access to the area while maintaining security and accountability of their ammunition. Safety was improved theaterwide when an informational packet on the proper handling and safety procedures for AT4 antitank weapons was distributed to all customer units receiving AT4s.

Force protection improvements at the CSA included the addition of 30 T-Wall barriers and 20 bunkers and improvement at the entry control points. Infrastructure improvements included the construction of a new ammunition turn-in facility and a $2.9 million project to replace aging HESCO barriers (a collapsible, wire-mesh container filled with sand) with revetment barriers. These improvements increased the overall storage capability of the CSA and simultaneously ensured against the spontaneous and continuous explosion of munitions if struck by local insurgent rounds.

Our success resulted not only from flawlessly conducted full-scale ammunition operations but also from employing a "one team-one fight" concept by the Soldiers and civilians operating the CSA. **ALOG**

First Lieutenant Tamera A. Greshik, USAR, is the Executive Officer for the 452d Ordnance Company in Aberdeen, South Dakota. She has been mobilized twice and deployed once in the past 3 years in support of Operations Iraqi Freedom and Enduring Freedom. She has a bachelor's degree in business administration from Rocky Mountain College and is a graduate of the Ordnance Officer Basic Course.

Al Asad Air Base CRSP

BY FIRST LIEUTENANT ROBERT D. GUNNING, JR.

The 169th Cargo Transfer Company is attached to the 867th Corps Support Battalion, 15th Sustainment Brigade, for its Operation Iraqi Freedom deployment. Originally a port operations cargo company, the 169th deployed as a cargo transfer company (CTC) in early September 2006. To address this change of mission, unit leaders had to train and qualify new Soldiers straight out of advanced individual training as military occupational specialty (MOS) 88H cargo handlers and in other MOSs. The 169th conducted driver's training courses and classes on the materials-handling equipment (MHE) that the unit would be operating while in theater.

The 169th CTC established a new central receiving and shipping point (CRSP) at Al Asad Air Base in Anbar Province, Iraq, in October 2006. My platoon, the 4th Platoon, was key in operating the CRSP. The new CRSP has helped to improve in-transit visibility and prevent cargo losses, and the once-inexperienced Soldiers have now evolved into seasoned MHE operators; their skill has proved to be important given the volume of work performed in the CRSP yard.

Once the CRSP layout was complete, the 169th developed a one-way traffic pattern to control the flow of movement inside the CRSP yard. The CTC replaced the existing two-way entry control point with one entrance point and one exit point. New screening lanes were put in place in order to better identify incoming and outgoing cargo. The new layout resulted in a definite increase in productivity and a significant decrease in pilferage.

The 4th Platoon's CTC missions include receiving, staging, documenting, and coordinating the upload and download of all unit equipment arriving in theater or departing for redeployment. The 169th provides supply support to seven forward operating bases (FOBs). Each FOB has its own cargo-staging lane in the CRSP. CRSP personnel use staging lanes to designate where cargo goes after it is downloaded. The CRSP yard also has a frustrated lane for cargo that arrives with no paperwork or point of contact and a holding lane for cargo destined to stay at Al Asad.

In order to operate the CRSP 24 hours a day, the 4th Platoon of the 169th CTC is split into two shifts. Most operators and the key leaders work during the day since most of the work and meetings take place then. To run a highly efficient yard in support of the outlying FOBs, the unit has developed a strong maintenance plan for keeping all of the MHE operational. The MHE, consisting of three Kalmars, two 10,000-pound forklifts, and one 6,000-pound forklift, go through a lot of stress during 24-hour operations, and most of the MHE is on its third or fourth rotation. Because of this, CRSP personnel conduct preventive maintenance checks and services every 12 hours.

A transportation movement request is used to identify each piece of cargo that arrives at the CRSP yard. This lets the operators know who sent the cargo, where it is going, and to whom it is being sent. Once identified, Soldiers stage the cargo in the lane designated for the FOB to which it will be shipped. CRSP personnel then attend a daily meeting at the battalion headquarters to help schedule a convoy to pick up the cargo, and then they remove the cargo from the yard's inventory.

Kellogg, Brown, and Root (KBR) contractors operate the CRSP yard's air sustainment cell. KBR works with the Navy to palletize all cargo going by air on 463L pallets and stage it for pickup.

Daily reports include a classified CRSP report that is sent to the battalion support operations office to let them know what has been physically inventoried in the CRSP yard. This report helps in designating trucks for cargo pickup. The operations section updates the Container Management Support Tool report. This report is helpful in determining which containers are Government owned and which are leased. Cargo handlers give priority to emptying leased containers so that they can be sent back to Kuwait before the lease expires.

The 169th conducted a relief in place and transfer of authority of the CRSP with KBR early this year. Although operating the CRSP and developing a transfer of authority plan bring forth many challenges, they serve as a great learning experience for the 169th CTC. Most of our customers represent the Navy, Marine Corps, Air Force, and Department of Defense civilians. Therefore, this has provided the first opportunity for most of our Soldiers to work in a joint environment. **ALOG**

FIRST LIEUTENANT ROBERT D. GUNNING, JR., IS A PLATOON LEADER IN THE 169TH CARGO TRANSFER COMPANY AT AL ASAD AIR BASE, IRAQ. HE HOLDS A BACHELOR'S DEGREE IN HEALTH, EXERCISE, AND SPORTS SCIENCE FROM THE CITADEL AND IS A GRADUATE OF THE TRANSPORTATION OFFICER BASIC COURSE, THE UNIT MOVEMENT OFFICER COURSE, AND THE SUPPORT OPERATIONS COURSE, PHASE I.

Spare Parts Recovery and Storage at Camp Taji

BY MAJOR SHAWN P. WARD

A pile of debris left by Saddam Hussein's Army provided an opportunity not only to obtain critical parts for Iraqi combat vehicles but also to train the next generation of Iraqi supply specialists.

After the dust from the initial offensive of Operation Iraqi Freedom began to settle, the long process of rebuilding the Iraqi Army started, one step at a time. One site involved in this rebuilding process was a salvage yard at the North Depot of Camp Taji. The yard was established at an old Iraqi Army supply depot, where mountainous piles of debris were spread over 2 acres. What made this site attractive for a salvage yard—and for a significant role in reconstituting the Iraqi Army—was the existence, beneath those debris piles, of critical Iraqi tank parts.

To capitalize on the readily available tank parts, U.S. Army planners awarded a spare parts contract to Iraqi nationals. Under this contract, serviceable spare parts were transported to the South Depot at Camp Taji for storage in four newly created warehouses for the 9th Iraqi Army Division. In essence, those warehouses reduced the dependence of the Iraqis on the U.S. Army and increased their self-reliance.

Recovering Parts

The contract workers recovered the spare parts from the North Depot and then checked them for serviceability. If the parts were serviceable, they were cleaned, packaged, inventoried, and shipped to the South Depot warehouses for stocking. If the parts were deemed unserviceable, they were set aside to be used as scrap metal. Sales of scrap metal became an alternative source of revenue for the U.S. Government, but undertaking the sales required that the scrap be neatly segregated from the recovery of serviceable parts.

The recovery process was quite labor intensive and required both Iraqi experts in tank parts and general laborers. They relied heavily on each other to locate, recover, and determine part serviceability. The extremely high summer temperatures only added to the grueling nature of the work. The recovery crews relied on the tank-part experts primarily for identifying parts. The part experts drove the process, and recovery work was delayed if any of them were absent. Most of the skilled workers commuted daily from Baghdad with their equipment.

Most of the parts had to be recovered by hand to prevent them from being damaged. The workers placed the parts in baskets alongside the debris piles for later removal by forklift. A crane lifted the larger bulk parts from the piles, though those parts made up a small percentage of the recovery. The workers moved the serviceable parts to temporary holding areas for cleaning, packaging, labeling, and inventory. Parts were temporarily stored by type and size before being shipped to the new warehouses.

Road closures and acts of terrorism caused dramatic swings in productivity throughout the process. Terrorism created a daily struggle for workers and the recovery process to overcome. Many of the workers' lives were threatened simply because they worked for the U.S. Government. Some workers were murdered, and others quit when terrorists threatened their lives. One day, all of the workers would report to work; the next day, only half would. This fluctuation in the strength of the work force significantly and negatively impacted the project's sustained productivity.

Creating Warehouses

The four newly renovated warehouses at the South Depot were designated to store the serviceable parts

Debris piled on more than 2 acres of an old Iraqi supply depot concealed a valuable commodity—Iraqi tank parts—and offered a huge challenge to Iraqi recovery workers.

An Iraqi warehouseman from the Logistics Battalion, 9th Iraqi Army Division, is tested on small-parts stocking.

that were recovered. The warehouses ultimately would store T–55, T–72, BMP–1, and MTLB tank parts. (All of these vehicles were old Soviet tracked, armored models.) Everything used to establish the warehouses was salvaged from the North Depot. Those items included shelving, storage baskets, pallets, and, of course, the valuable spare parts themselves.

Initially, an assessment was needed to project the approximate number of tank parts to be recovered from the debris piles. This helped to determine how each warehouse would be configured for storage space. Based on the initial assessment, the planners determined that 60 percent of the parts were T–55 parts, 25 percent were T–72, 10 percent BMP–1, and 5 percent MTLB. A further assessment determined the numbers of small parts and of medium and large parts that had to be stored. The planners allocated one warehouse for small parts storage and the other three for storing medium parts. The initial assessments paid off: very few changes were required throughout the project.

Once the planners established the percentages of parts to be stored, it was time to recover and dismantle shelving from the North Depot to be transported and reassembled at the South Depot. Excess storage capacity was automatically built into the original estimates. The shelving was an important stage in establishing the warehouses. All shelving, baskets, and pallets were hand-picked for quality and durability. The shelving recovery process was almost as labor intensive as the parts recovery.

The shelving systems were either dismantled or cut out by blow torch from the old warehouses and reassembled in the new facilities. After the workers installed the shelving, it had to be sand-blasted and painted. The painting process offered its own challenges. The paint had to be shipped from Baghdad, a process that was notorious for delays. Once the shelving was erected, it needed to be stocked with parts. This phase also faced daily obstacles.

The unique challenge presented was the ability to determine exactly how many parts, by type, would be recovered. Every day, a new debris pile could turn up an entirely new series of parts. In a new U.S. Army warehouse facility, planners know exactly how many lines will be stocked and can organize the shelving and storage space accordingly. In this project, locations of parts required some periodic adjustments until the work neared completion.

As workers refurbished the warehouses, a few enhancements were required to complete the project. These enhancements included a supply gate and fencing system to establish two separate bulk storage areas. The final addition added warehouse lighting to the interior of the small parts warehouse. The additional lighting was needed to light up the bottom level of shelving because the top level of shelving was blocking the light coming from the ceiling lamps.

The warehouses were not on a power grid, so all power had to be provided by generator. However, the generators were unreliable, and maintaining a sufficient fuel supply to power them was a constant problem. The generators were old and would break down after about a month of use; when that happened, a replacement generator had to be brought in from Baghdad. Fuel rationing was a daily occurrence and made it a challenge to keep records up to date.

The small parts warehouse consisted of a two-level catwalk shelving system. This warehouse, designated Warehouse One, primarily stored T–55 small parts along with some T–72, BMP–1, and MTLB parts. Warehouse Two contained T–55 medium-sized parts; Warehouse Three included T–55 and T–72 parts; and Warehouse Four stored BMP–1 and MTLB tank parts. A T–55 and T–72 bulk storage yard was located between Warehouses One and Two. A bulk storage area was added between Warehouses Three and Four toward the end of the project; this supply yard stored the BMP–1 and MTLB bulk tank parts.

After parts began flowing into the new warehouses at the South Depot, the inventory system was launched. This involved labeling and storing parts in locations in a manner that made logical sense to the Iraqis. Their system needed to flow from right to left, reflecting the Arabic language, which is read from right to left; that, of course, is the opposite of the English language and thus of the U.S. system.

The location labeling system also needed to be bilingual for U.S. and Iraqi personnel to understand what was stored in each location. This became very important as development of a database began.

All inventories were updated initially on a running spreadsheet. Later in the project, planners developed a database system. The database also needed to be designed bilingually to transfer complete control of the process to the Iraqi Army. The database allowed Iraqi soldiers to print reports and capture inventories. The trainers ensured that all data were entered efficiently and accurately.

Locations needed to be spot checked as a quality control measure to ensure that parts were not misstocked or miscounted. This system proved to be essential because parts were periodically misstocked or mislabeled. Workers conducted several 100-percent inventories to verify stock balances. Spot checks were very helpful in determining location accuracy. Whenever accuracy dropped below 95 percent, the database system generated a 100-percent inventory.

Logistics Training

Once Warehouses One and Two neared completion, the planners began to introduce the Iraqi warehousemen into the process. This required development of a comprehensive lesson plan that included classroom work, practical exercises, and a formal graduation. The training of the Iraqi soldiers was a challenge in itself. The Iraqis' liberal leave policy meant that about half of the soldiers would start to leave midway through the 2-week course; these soldiers then had to be rescheduled to complete their training during the next course offering. Departures for leave occurred even when class dates were prearranged with the Iraqi commanders.

The classes also required an Iraqi interpreter to translate slides and class discussions. The soldiers would ask many questions, which helped instructors to gauge if the material was being understood. Unfortunately, it was common to graduate a class and then see one or two soldiers diverted to another unit. This meant that new soldiers had to be identified and trained from among the limited number of Iraqi personnel available. As a result, the best and brightest Iraqis did not always get selected for warehouse training.

The course work included basic MicroSoft Windows training, if required by the students, before moving to more advanced database concepts. Computer training was one of the greater challenges because most of the Iraqis had never touched a keyboard. The selected soldiers either needed to have a basic background in computers or would have to be taught basic computer and Windows concepts. As a result, potential students required a computer aptitude assessment before they started the database training. The instructors received great satisfaction watching the Iraqi soldiers grow and develop. Most of the soldiers were motivated to learn and wanted to be successful.

Out of the four Iraqi soldiers who were identified to be stock control clerks, one ended up becoming fairly proficient on the database system. He became the primary user and assisted in the training of the other three soldiers. The designers developed the inventory system in partnership with the Iraqis to ensure that all phases of development were understandable.

The total training lasted more than 2 months and graduated 14 solid warehousing soldiers. The soldiers are working in the warehouses today and making steady progress in supporting the 9th Iraqi Army Division. This is the first known effort of its kind to completely transfer logistics operations to an Iraqi divisional unit. They took over complete control of the operation with limited adviser oversight.

The ribbon-cutting ceremony for the warehouse complex occurred on 25 September 2006. This effort received visibility throughout the U.S. and Iraqi chains of command. The event attracted the Commanding General of the Iraqi Assistance Group, the Commanding General of the Coalition Military Assistance Training Team, the 4th Infantry Division's Assistant Division Commander for Support, several colonels and lieutenant colonels, and a host of distinguished guests. The event received American Forces Network coverage and was considered a victory for logistics operations in Iraq.

In the end, the spare parts recovery effort saved the U.S. Government an estimated $50 million. The project originally began in September 2005 and, after several setbacks, reemerged in February 2006. Many felt that the project could not be completed in the 6-month timeline. When looking at performing the daunting recovery mission with limited personnel and inadequate equipment, it looked like an impossible task. The sheer magnitude of the project had most officials estimating that 12 to 18 months would be needed to finish. However, after just 7 months, the warehouses were transferred to fully trained Iraqi warehousemen. **ALOG**

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Modular Fuel System Improves Fuel Distribution

BY MAJOR LEON O. WILLIAMS AND ARTHUR JANKOWSKI

The Army has a history of being at the leading edge of warfighting technological innovation. That tradition is continuing with the development by the Product Manager, Petroleum and Water Systems (PM PAWS), in Warren, Michigan, of the Modular Fuel System (MFS), formerly known as the Load Handling System Modular Fuel Farm. The MFS will dramatically alter the way the Army distributes bulk and retail fuel. The MFS consists of two 600-gallon-per-minute pump racks and fourteen 2,500-gallon tank racks for a total capacity of 35,000 gallons. This system is destined to become the cornerstone of class III (petroleum, oils, and lubricants) support for the Army's Future Combat Systems, modular brigades, and Stryker brigade combat teams. The Army does not have a legacy system that can compare to the MFS's increased mobility, capability, compatibility, maintainability, sustainability, and performance.

ISO Tank Rack Design

The Army's decision to use a separate International Organization for Standardization (ISO) tank rack and pump rack configuration established the foundation for the flexible MFS. A surprisingly large amount of equipment was incorporated into the two racks as standard equipment, so a separate vehicle no longer will be required to follow the tanker to carry essential equipment. The standard equipment setup includes 3,300 feet of hose and the full compliment of nozzles needed to support multiple retail, bulk, and aviation distribution points. The system can support two refuel-on-the-move configurations for a total of 16 distribution points. A full range of nozzles are provided with the MFS, including the D–1, 1 inch, 1.5 inch, closed-circuit refueling, and North Atlantic Treaty Organization. The MFS is compatible with all military fuel mixtures, and an additive fuel injector can be installed.

Redundancy is critical in today's fast-paced battlefield environment. The MFS achieves redundancy by using ISO-certified, self-contained tank and pump racks. Built-in test equipment with manual override and bypass tubing also has been installed for all critical functions. The independence of each pump or tank rack provides the needed redundancy

A load-handling system is being used to transport a Modular Fuel System.

MFS Capabilities	
• Setup/teardown	1 hour with limited engineer support
• 2,500 gallon tanks (14)	35,000 capacity
• Pump racks (2)	600-gallon-per-minute pumps, 3-stage filter/separator, spill control kits, and fuel test kits
• Fuels Manager Control Panel	Remote control of all units from pump rack
• Transportability	C–130; CH–47; 10,000 pound materials-handling equipment; palletized load system; load-handling system; and air droppable tank rack
• Components	3,300-foot hose and more than 116 nozzles, fittings, and adapters

and ensures that a failure in any single component will not compromise mission support.

Safety and Environmental Features

Safety and environmental concerns were addressed early in the development of the system, ensuring that exceptional safety standards were set. For example, the common "dead man" switch on the fuel manager control panel is backed up by multiple emergency shut-off switches, and the remote-controlled tank valves are backed up by manual safety shut-off valves. In addition, a new Fuel Tank Sealant System (FTSS) is being considered for incorporation into the system. The FTSS would provide secondary containment without adding significant weight to the MFS's streamlined weight configuration.

The MFS not only will be the usual Army green, but it also will be environmentally "green." The primary contractor has incorporated a new standard for environmental excellence into the overall system design. One example of this concerted effort is the replacement of industry-standard cadmium connectors with more environmentally friendly stainless steel connectors. This change will reduce future demilitarization costs significantly. The contractor worked closely with PM PAWS in a team effort to create a truly "green" machine.

Low rate initial production of MFS resulted in the delivery of developmental testing assets in November 2005. These assets are being subjected to rigorous, ongoing testing that will determine their ability to meet the high standards required to achieve a 25-year design life. Once the testing is complete and all military specifications are met, the Army will be ready to field the MFS. **ALOG**

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ALOG NEWS

SDDC BECOMES AMC COMMAND WHILE REMAINING TRANSCOM COMPONENT

The Military Surface Deployment and Distribution Command (SDDC) has become a major subordinate command of the Army Materiel Command (AMC). It continues to be the Army service component command to the U.S. Transportation Command (TRANSCOM).

SDDC had been a major Army command, or "MACOM." However, under Decision Point 58 of the Army Command Plan, approved by the Secretary of the Army in October 2006, the Army eliminated the "MACOM" designation and replaced it with "Army command." AMC, the Army Forces Command, and the Army Training and Doctrine Command are the only organizations designated as Army commands.

The change in the status of SDDC means that SDDC is under the administrative control of AMC but the operational control of TRANSCOM. SDDC will continue to provide end-to-end surface deployment and distribution support to TRANSCOM. According to the SDDC Chief of Staff, Colonel Timothy McNulty, "It's important to note our [SDDC's] service to the warfighters will not change under this change in command relationship. The change . . . will be transparent to the folks we support daily and to our workforce as well."

The new arrangement will create a single Army integrator of logistics with joint and strategic partners, improve coordination of the distribution pipeline from the national sustainment base to deployed theater support units, improve projection of forces from the United States, and improve reset of forces after they return to their home stations.

ARMY BUDGET CALLS FOR SIGNIFICANT INCREASE

The Army budget submitted to Congress in February requests $130.019 billion for fiscal year (FY) 2008. This is an increase of $19.928 billion, or 18.1 percent, over the request of $110.091 billion for FY 2007. The budget submission also seeks $140.666 billion for FY 2009. The Army budget constitutes 27 percent of the $481.4 billion requested for the Department of Defense.

The budget proposal is designed to support the goals of winning the Long War, sustaining the all-volunteer force, building readiness, accelerating modernization, and restationing of Army forces.

The budget calls for spending in the following major categories—

- Military personnel: $46.193 billion in FY 2008 (an increase of 7.2 percent from the FY 2007 request) and $51.289 billion in FY 2009.
- Operation and maintenance: $37.273 billion in FY 2008 (up 19 cent from FY 2007) and $39.952 billion in FY 2009.
- Procurement: $23.753 billion in FY 2008 (up 54.3 cent) and 26.193 billion in FY 2009.
- Research, development, test, and evaluation: $10.590 billion in FY 2008 (down 3.4 percent from FY 2006) and $9.794 billion in FY 2009.
- Military construction: $4.563 billion in FY 2008 (up 69 percent) and $5.704 billion in FY 2009.
- Family housing: $1.162 billion in FY 2008 (down 8.6 percent) and $1.481 billion in FY 2009.

The procurement request will support the acquisition in FY 2008 of—

- 3,268 high-mobility, multipurpose wheeled vehicles (HMMWVs) for $596.6 million. All will be the armored M1151A1, M1152A1, and M1165A1 variants.
- 2,862 Family of Medium Tactical Vehicles trucks and 1,563 trailers for $828.4 million.
- 125 palletized load system (PLS) trucks; 1,412 PLS trailers; 1,650 container roll-on-roll-off platforms; 190 container handling units; and 2,524 Movement Tracking Systems, for $232.5 million.
- 284 forward repair systems for $93.4 million. The forward repair system combines tools, diagnostic equipment, and heavy-lift capability in one package that brigade support battalions, field support companies, and maintenance field companies can use to provide forward maintenance support. Expanded use of the forward repair system will free units from having to use the M88 recovery vehicle as a repair vehicle.
- 47 containerized kitchens for 11.5 million and 77 assault kitchens for $5.9 million. The containerized kitchen is replacing the mobile kitchen trailer, and the assault kitchen is replacing the kitchen, company level, field feeding enhanced.
- 22 mobile integrated remains collection systems for $9.9 million. This will be the first acquisition of the mobile integrated remains collection system, which is a mobile facility that will be used for the initial processing and storage of remains on the battlefield.

• 126 water purification systems for $42 million. These include 50 of the new lightweight water purification systems, which are designed for use during early-entry and similar forward-area operations.

• 504 mobile maintenance equipment systems for 51.5 million. These systems, which include the shop equipment contact maintenance truck, standard automotive tool set, and shop equipment welding, improve on-site battlefield maintenance.

• 1 joint high speed vessel for $210 million. The Army plans to acquire five joint high speed vessels by FY 2012 to support logistics over-the-shore, in-theater port control, and riverine logistics operations.

The budget requests no funds for further development and production of the Land Warrior system. However, the Army will continue to support the one Stryker battalion that has been equipped with Land Warrior.

The budget asks for $4.016 billion to execute 89 military construction projects designed to meet base realignment and closure requirements. Among these projects are construction of the Sustainment Center of Excellence and the Joint Center for Consolidated Transportation Management Training at Fort Lee, Virginia; construction of a new headquarters building for the Army Materiel Command at Redstone Arsenal, Alabama; movement of the Army Surface Deployment and Distribution Command from Alexandria, Virginia, to Scott Air Force Base, Illinois; and closure of Kansas Army Ammunition Plant and Lone Star Army Ammunition Plant, Texas.

DOD BUILDS ON AKO TO CREATE "DKO"

Army Knowledge Online (AKO) is undergoing a transformation to support all Department of Defense (DOD) users. The result will be an adaptive and agile enterprise portal, called Defense Knowledge Online (DKO), that will facilitate knowledge management, collaboration, and information-sharing across DOD and other Government agencies. DKO initially will be built on the AKO unclassified portal. AKO is the largest and most mature of all DOD portals and currently supports nearly 2 million users.

The existing AKO Project Office serves as the foundation for the DKO Project Office. The DKO team is staffed with representatives from participating combatant commands, the military services, and Defense agencies. The team's initial objectives are to facilitate the addition of joint access to the current AKO; migrate a limited number of joint users (150,000) and joint content; and support the

Soldiers of the 1st Stryker Brigade, 25th Infantry Division, at Fort Wainwright, Alaska, perform maintenance on Stryker vehicle components following their redeployment from Iraq. The brigade is the first unit to use the Army's new reset process. In the past, refurbishing equipment meant sending it to a depot for approximately 6 months. Under the new process, the majority of work is performed at home station. The goal is to reduce the time needed for reset to 4 months. The brigade, formerly the 172d Stryker Brigade, was redesignated in December 2006.

expansion of AKO to DKO through pilot projects with the Joint Forces Command and the Defense Information Systems Agency (DISA).

When mature, DKO will consist of a personalized, user-defined, Web-based presentation that allows for secure access to enterprise services, applications, and content. It will provide warfighters, policymakers, and support personnel with portal capabilities as well as a platform for launching DISA's Net-Centric Enterprise Services and other DOD enterprise services. As its initial services, DKO will offer universal directory services, such as white pages with contact information for all account holders; limited single sign-on capability; group-based access control and contacts; and Common Access Card and public key infrastructure.

The first group of pre-authorized DOD users was able to register for an AKO/DKO account in January. DKO should be ready to accept all joint users by fiscal year 2010.

STANDARDIZATION WITHIN NATO COURSE SLATED

The Standardization Within NATO [North Atlantic Treaty Organization] Course will be presented 10 to 12 July 2007 in Chantilly, Virginia. This is the first version of this course to be offered in the United States. An abridged version of pre-existing NATO standardization training, this course is tailored to meet the educational needs of a U.S. audience. Instruction will cover the structure and principles of the NATO standardization, standardization agreements, use of civil standards, and U.S. participation in the standardization process.

The course is geared for military and Department of Defense (DOD) civilian personnel who need a fundamental knowledge of standardization and interoperability within NATO. Non-DOD Federal Government employees and defense contractors are eligible for this course on a space available basis.

The course is being hosted by the Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics, International Cooperation Office; the Defense Logistics Agency's Defense Standardization Program Office; and the North Atlantic Treaty Organization Standardization Agency. There is no charge for this course; however, the attendee's organization is responsible for travel expenses. Anyone interested in attending this course should contact Latasha Beckman at (703) 767–6872 or latasha.beckman@dla.mil.

ARMY PLANS ELECTRONICS WARFARE SPECIALTY

In order to strengthen its ability to use electronic warfare in the fight against terrorism, the Army plans to establish an electronic warfare military operational specialty (MOS) and a parallel officer career field by March 2008. Electronic warfare is military action that uses electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy.

The Army established an Electronic Warfare Division as part of the Army Asymmetric Warfare Office in April 2006. The Electronic Warfare Division began a joint training program on electronic warfare in October, with classes being taught at Fort Huachuca, Arizona, and Fort Sill, Oklahoma. The Tactical Course at Fort Huachuca is a 3-week class for Soldiers at the battalion level and below. The Operational Course at Fort Sill is a 6-week course for Soldiers operating at the brigade level and above.

Until the Army established the Electronic Warfare Division and began the training, the Navy was the only service with an ongoing electronic warfare program. Because of this, the Navy developed the courses for the Army. While this training is being conducted, Navy electronic warfare personnel have been assisting the ground forces in conducting electronic warfare. The Army plans to replace about 150 of the Navy personnel with newly trained Army personnel. The more experienced Navy personnel will continue to provide support at the division and corps levels.

Since the electronic warfare training is not MOS-specific, unit commanders preparing to deploy for Iraq or Afghanistan will select Soldiers in the grades of E–6 and above to attend one of the courses. The Soldiers may come from combat arms, combat support, or combat service support units. Soldiers have to be trained to use electronic warfare more precisely than they had to on the linear battlefield because, in an asymmetric war zone, broader use of electronic measures has the potential of knocking out the Army's own systems.

The Army's goal is to make electronic warfare a core capability in which all Soldiers have some training.

ONLINE TOOL HELPS UNITS SELECT WATER PURIFICATION SYSTEMS

The Army Center for Health Promotion and Preventive Medicine has developed an online decision

A system that can protect soft-walled shelters against damage from indirect fire has been developed by the Natick Soldier Center in Massachusetts and the Advanced Engineered Wood Composites Center at the University of Maine. The Modular Ballistic Protection System (MBPS) is a set of armored panels that can be placed inside a shelter's skin. Each panel is wood with an outer layer of E-glass, which is a ballistic armor material. MBPS is lightweight, portable, and reusable and can be installed without special tools and without modifying the shelter (as shown at left). Natick will deploy a prototype MBPS to a combat zone for testing.

tool to help units determine which water purification systems will best meet their needs. The online tool can give units the information needed to select the best water purification system for their exact circumstances. This tool helps units evaluate what might work best for them and identifies systems that do not work at all.

Clean water is critical to military operations. It is used for everything from drinking to hygiene and field sanitation to food preparation to medical care. The typical deployed Soldier uses 15 to 20 gallons of water a day. Although the Army has water purification systems that are dedicated to ensuring that Soldiers have the water they need, Soldiers sometimes find themselves in situations that prevent them from getting to that water. At those times, Soldiers need a means to purify whatever water is available. Many portable water purification systems are available for purchase, but deciding which one to use is not easy. Some are more effective than others, and some are more effective in specific circumstances.

This tool is the result of an 18-month scientific study of 68 commercial off-the-shelf water purification systems conducted by the Army Center for Health Promotion and Preventive Medicine. During the evaluation, it became apparent that no one system will meet every military requirement. The personal water purifier that works best depends on a range of considerations, such as whether the unit is operating at a sanitary base camp or is on the move. Other factors that play into the decision include the size and weight of the system, how easy it is to use, its cost, and its effectiveness. A unit can use the decision tool to determine which system would work best for it, based on its particular situation and needs.

The tool can be accessed on the Internet at http://chppm-www.apgea.army.mil/wpd/.

Army Logistician (ISSN 0004–2528) is a bimonthly professional bulletin published by the Army Logistics Management College, 2401 Quarters Road, Fort Lee, Virginia 23801–1705. Periodicals postage is paid at Petersburg, VA 23804–9998, and at additional mailing offices.

Mission: *Army Logistician* is the Department of the Army's official professional bulletin on logistics. Its mission is to publish timely, authoritative information on Army and Defense logistics plans, programs, policies, operations, procedures, and doctrine for the benefit of all logistics personnel. Its purpose is to provide a forum for the exchange of information and expression of original, creative, innovative thought on logistics functions.

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Postmaster: Send address changes to: EDITOR ARMY LOGISTICIAN/ALMC/2401 QUARTERS RD/FT LEE VA 23801–1705.

Coming in Future Issues—

- **Contingency Contracting and LOGCAP Support in MND–B, Iraq**
- **Leveraging Logistics Contracts**
- **Modernizing Army Budget Management With GFEBS**
- **Closing the Loop on Property Accountability**
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ISSN 0004–2528
DEPARTMENT OF THE ARMY
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