ARMY LOGISTICIAN

NOVEMBER-DECEMBER 1994

Civilians on the Battlefield

Also in this issue—

- Logistician's View of the III Corps Warfighter
- Health-Care Logistics at the Edge of Nowhere
- Developing Logistics Executives

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ARTICLES

DEPARTMENTS

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COVER

When units of America's Army deploy to meet a contingency, now more than ever before civilians deploy with them to provide additional support. The cover photos depict a few of the many varied roles civilians play in support operations. The story of "Civilians on the Battlefield" begins on page 2.

This medium is approved for the official dissemination of material designed to keep individuals within the Army knowledgeable of current and emerging developments within their areas of expertise for the purpose of enhancing their professional development.

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

Milton H. Hamilton

MILTON H. HAMILTON
Administrative Assistant
to the Secretary of the Army
07234

ALOG EMPHASIS

RELIEF EFFORT IN RWANDA

In August, the Army became involved in Operation Support Hope, a large-scale humanitarian relief effort in Africa. More than a million refugees were fleeing a brutal civil war in Rwanda, only to find themselves in crowded, disease-stricken, refugee camps in Zaire and Uganda. The Army's mission was to save lives; stabilize the refugee situation; enable refugees to return to their homes; turn over operations to United Nations agencies and nongovernmental organizations; and redeploy U.S. soldiers and civilians. Civilians and private contractors are supporting the military in providing clean drinking water to refugees; maintaining water purification and power generation equipment, materials-handling equipment, and cargo vehicles; and accounting for supplies offloaded from ships arriving in port. Other military missions include driving trucks; unloading ships; providing communications, medical support, and security; clearing operations sites; and repairing roads. The Army's prepo-afloat capability was vividly demonstrated when five ships were dispatched, loaded with vehicles, equipment, tents, food, repair parts, and medical supplies. Strategic airlift and sealift were used to deliver soldiers, supplies, and equipment to the area. The Army is working closely with United Nations relief organizations, allies, and the Navy, Air Force, and Marines in a truly joint, combined, and international effort. The mission is not intended to be one of peacekeeping but, rather, one of lifesaving and life-preserving work.

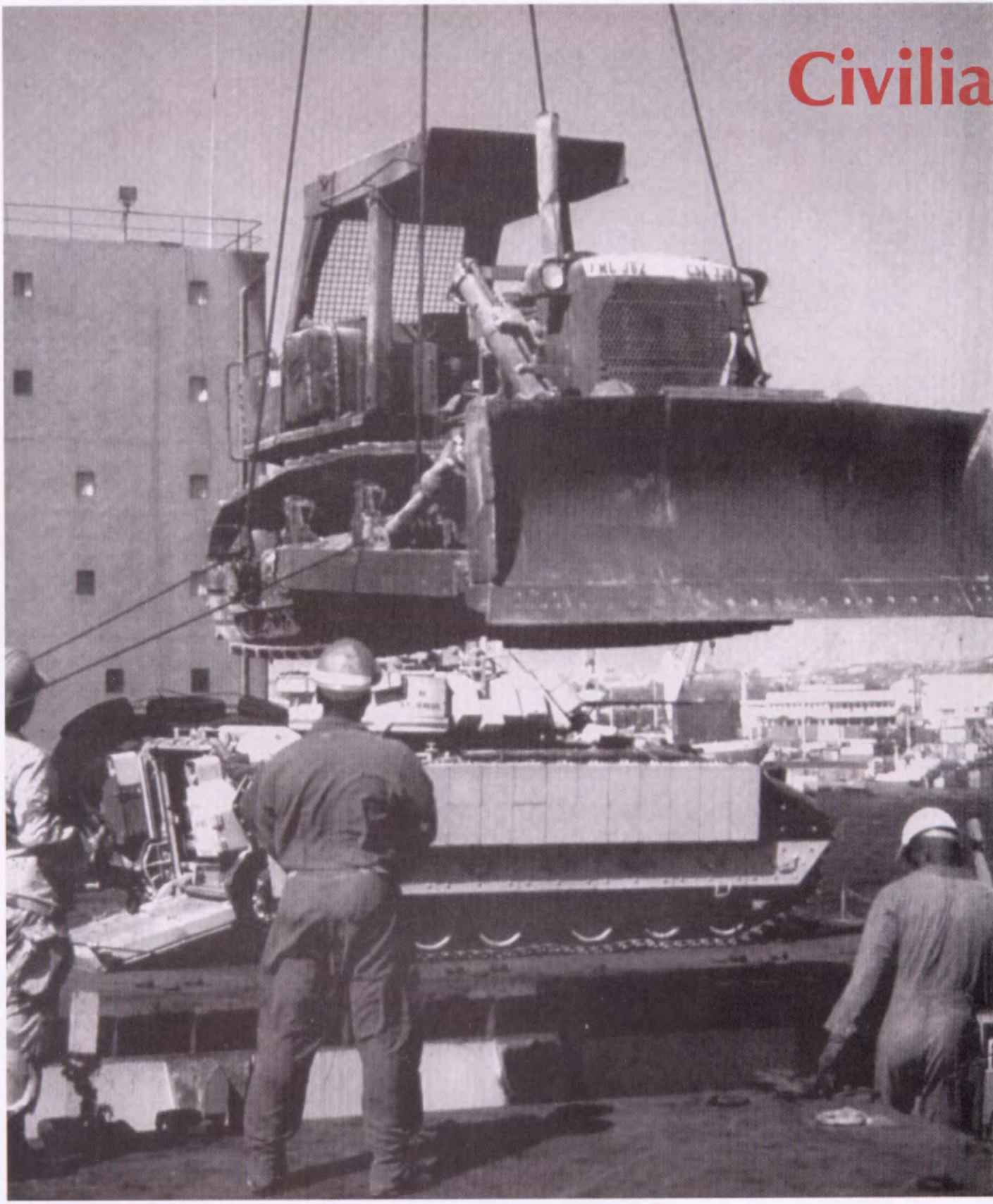
SIXTH ARMY TO STAY

Sixth U.S. Army Headquarters, originally scheduled to relocate to Fort Carson, Colorado, will remain at the Presidio of San Francisco, California. The first Base Realignment and Closure (BRAC) Commission had recommended closing the Presidio as a military installation. The Army planned to turn the post over to the National Park Service. The Army now will retain 29 percent of the building space, which amounts to 277 buildings that include 600 housing units.

REFUELING DANGER NOTED

The emergency breakaway coupling, NSN 4730-01-297-6843, of the heavy, expanded mobility, tactical truck (HEMTT) tanker aviation refueling system, must be removed from service. A recent refueling accident occurred when the coupler became disconnected during hot refueling of an AH-64 aircraft. Due to improper attachment, the emergency breakaway coupling separated from the refueling nozzle, allowing fuel to spray onto the aircraft. As a result, the aircraft caught fire, injuring two crewmembers. For instructions on corrective actions, call Charles Bright at DSN 693-3888 or commercial (314) 263-3888.

(Continued on page 48)



Civilia

Civilians work side-by-side with the military during this Desert Shield-Desert Storm port operation.

ns on the Battlefield

by Larry L. Toler

General Sullivan's comments about the civilian role in support of military operations recognize an important aspect of our evolving national military strategy in a post-cold war environment. In an environment characterized by drawdowns of the organic force structure, particularly in the support areas, civilians are being called upon to do more than in the past. In response, the former commander of the Army Materiel Command (AMC), General Jimmy D. Ross, in May 1993 approved a plan proposed by A. R. Keltz, AMC's principal deputy for logistics. This plan ensures that military commanders and civilian employees are made aware of the part civilians play in support of military operations. These operations include not only the support needed in such places as Southwest Asia, Somalia, Macedonia, and Rwanda but also support for contingencies such as Hurricanes Andrew and Iniki, last year's midwestern flood, and this year's California earthquake.

Following approval of the plan, an interdisciplinary team was chartered to review all issues affecting the deployment of AMC civilians to support military operations. The team consisted of representatives from the logistics community; AMC's personnel, legal, finance, and resource management branches; depot operations; and the Aberdeen Proving Ground, Maryland, central departure point. In its review of charter issues, the team decided to—

- Focus on AMC's U.S. direct-hire civilian employees.
- Review rules of engagement and status of civilians involved in military operations.
- Review emergency-essential guidelines.
- Analyze current Army and Department of Defense (DOD) provisions.
- Research associated civilian personnel issues.
- Develop a plan to orient AMC commanders and civilian employees on deployment issues.

In June 1993, the team began researching charter issues and discovered that, while there were existing policies and regulations governing the deployment of civilian employees, there was no single source of information available to help manage the civilian deployment process. The team also identified voids in policies, procedures, and regulations that left the implementation process unclear.

The study team first concentrated on a thorough literature review to determine what information and guidance were available. During the research process, team members also conducted interviews with military commanders, civilian employees deployed during Operations Desert Shield and Desert Storm and Hurricane Andrew, management-employee specialists, lawyers, and field logisticians. Each issue was reviewed for alternative views of current procedures and proposed solutions.

General Findings

On 2 November 1990, former Chief of Staff of the Army, General Carl Vuono, said, "As we have seen throughout history, and as has been dramatically underscored by Desert Shield, our civilians fulfill a vital role in our trained and ready Army." This statement confirms the bottom-line finding of the study team—civilians are integral to maintaining and sustaining the force readiness of the Army.

Historically, civilians were involved in support of military operations as early as the Revolutionary War, when George Washington used contract drivers to move military supplies and equipment. This strategy is still being used today, as evidenced by the use of host-nation contract drivers to move supplies in the Gulf War.

> *The civilian presence in the Gulf region meant more than moral support and filling in for soldiers. Gulf-War veterans say that combat soldiers could owe their lives to the DA [Department of the Army] civilians who helped maintain equipment by speeding up the process of getting parts and other support. . . .Their teamwork tells it all; they've been with their military colleagues every step of the way.*
>
> *–General Gordon R. Sullivan*
> *Chief of Staff, Army*

Civilian employees were used to support combat troops during the two World Wars and the Korean and Vietnam Wars. These civilians contributed to the success of logistics operations and overall mission accomplishment. Significantly, these civilians were reassigned through the permanent change-of-station process when they deployed to support military operations. This helped establish a well-defined chain of command for the civilian employees. In most cases, there were also clearly defined boundaries that delineated areas of potential hostilities and offered a certain amount of pro-

tection for the civilian work force. These employees normally had the advantage of at least some military training and were generally familiar with the tactical and operational levels of engagement.

These factors did not characterize recent deployments to Southwest Asia, Somalia, Macedonia, and other trouble spots in the world. In almost all cases, civilians were sent in a temporary duty status to fulfill undetermined intheater duties. Deploying civilians in a temporary duty status, and not detailing them to a formal unit, can cause supervision and chain-of-command problems. Many of the civilians who deployed, particularly to support operations in the Gulf, were not trained in the military arts and were not fully aware of tactical and operational objectives. This is not a reflection of the technical and functional capabilities of those who deployed but rather a reality of life resulting from the changing demographics of our society in general and our civilian work force in particular.

This background formed the basis for additional study, which led to the following findings by the study team—

- There is a general lack of awareness of the expectations of the civilian work force, from both civilian workers and management-leadership.
- Army leadership prefers volunteers for positions that are not emergency-essential.
- There are few incentives, other than loyalty and patriotism, for civilians to volunteer.
- Many important rules are unclear, including those governing life insurance coverage, the chain of command, issue and use of weapons, and combatant status.
- There is a void within Army warfighting and support doctrine on the use of civilians.
- Disjointed, nonstandard information is used to manage the current civilian deployment process.
- There is no clear concept of civilian replacement or rotation.

Reference Guides

These general findings prompted additional research by the study team to identify specific issues. These specific issues are either governed by current policies and procedures or are handled on an ad hoc basis. These issues are the heart of the civilian deployment process and require intensive management by commands, staffs, and operational organizations.

To ease the management burden, the study team developed a simple *AMC Civilian Deployment Guide.* This guide is written in layman's language and is devoid of any regulatory or legal language for ease of use in the field. The guide assembles the vast majority of civilian deployment policies and procedures in one compact publication. The deployment guide will be issued to all emergency-essential AMC civilian employees, AMC military commanders, and other AMC civilians with a high probability of deployment.

To supplement the guide and help local civilian personnel offices answer questions, the team also developed a *CPO Reference Guide.* This guide identifies the specific issues affecting civilian deployment, including the regulatory and procedural references that support the language in the deployment guide. The *CPO Reference Guide* will be issued to all AMC operating and supporting civilian personnel offices and emergency operations centers.

The specific issues that apply to the management of deploying AMC civilians include legal, personnel, medical, and equipment needs. Some of these issues are easily defined, but others involve a certain amount of controversy.

Who Goes?

The most controversial issue might be the interpretation of DOD Directive 1404.10 (10 April 1992), which governs the emergency-essential program for DOD civilians. Under current DOD policies and procedures, civilian employees can be directed or assigned to perform missions voluntarily, involuntarily, or on an unexpected basis. This may require civilian employees to perform combat support or other crisis-essential functions. Civilian employees can be directed to perform these functions even if they have refused to sign the emergency-essential agreement. This authority exists whether or not the position held by the civilian employee has been identified as an emergency-essential position or designated as an emergency-essential position due to a crisis. The AMC commander's policy is to minimize the number of employees who would be involuntarily deployed. Before a civilian employee is sent involuntarily, a search will be conducted first to determine if military personnel are available to satisfy the requirement or if other civilian employees are willing to volunteer.

Legal Status

Another controversial issue is the international status of civilians who deploy to support military operations. The 1907 Hague and the 1949 Geneva Conventions are rules that were developed by the international community to govern the law of warfare. These agreements have evolved into principles that are now recognized as part of international law.

Under both the Hague and Geneva Conventions, combatants and noncombatants are entitled to be protected as prisoners of war if captured. These protections are accorded to those persons who accompany the armed forces without actually being members, provided they have received authorization from the armed forces they accompany and are provided with an identity card—the Geneva Convention card.

Civilians who take part in hostilities may be regard-

Civilians augment the Army's technical expertise in maintaining and sustaining the force.

ed as combatants and thus may be subject to attack or injury incidental to an attack on military objectives. The law of war does not clearly define those taking part in hostilities, but generally they can be defined as civilians accompanying an armed force in a support role. Since AMC civilians augment the Army in areas where technical expertise is not available or is in short supply, they in effect become substitutes for military personnel who would be combatants.

Command and Control

Other issues covered by the study team, while not as controversial, require clear guidance to enable a smooth, well-coordinated deployment and redeployment. Of those issues, some are covered in the deployment guide to ensure uniformity of processing and deployment.

AMC has established a multifunctional logistics command and control activity to tailor its individual missions to the needs of each particular deployment. This umbrella organization is the logistics support element (LSE). (See article in July-August issue of *Army Logistician*, page 18.) AMC civilians deploying on support operations will normally be temporarily assigned to the LSE for command and control. The table of distribution and allowances for the LSE is modular so it can be tailored to each contingency. When fully deployed, the LSE will consist of approximately 1,300 personnel, the majority being civilians, and will provide a limited depot capability. The organization consists of traditional depot divisions of supply, maintenance, and ammunition and supporting offices, along with elements to support field requirements for oil analysis; test, measurement, and diagnostic equipment; and technology insertion.

The misunderstandings and unclear lines of authority identified during the Gulf War demonstrate the importance of command and control of civilians deployed to support military operations. Deployed civilians will now be temporarily detailed to the LSE for command and control and will report directly to the intheater chain of command. The intheater supervisory chain will also be responsible for all normal personnel management. Civilians will continue to be subject to normal administrative disciplinary procedures but will not be subject to the Uniform Code of Military Justice in anything short of a congressionally declared war.

Legal and Medical Assistance

Civilian employees identified for deployment will also be eligible for Government-provided legal assistance. This legal assistance extends to the immediate family but is restricted to deployment-related issues such as preparation of powers-of-attorney or wills and deployment-related tax assistance. The legal assistance is available during deployment and for a reasonable amount of time after return.

Other issues concerning civilian deployment center on medical treatment and responsibility for care. All deploying AMC civilians must successfully complete a predeployment physical similar to that given to all AMC logistics assistance representatives. This medical screening is not a condition of employment but is a standard for deployment to ensure the health and safety of all intheater personnel. Deploying civilians will be afforded coverage in the military medical care system with the same rights and priorities as military personnel.

If follow-on care is necessary, or if a medical condition arises after return from a theater of operations, the civilian employee will be covered under the Federal Employees' Compensation Act. For this coverage to be effective, there must be documented evidence linking the condition to the period of deployment. Medical records will also be prepared for civilian employees, including dental panorexes for identification purposes. All required shots and immunizations will be administered during the predeployment physical.

Travel, Pay, and Insurance

To help ensure consistency of treatment and processing, all AMC civilians will deploy through the central departure point at Aberdeen Proving Ground. The deployment guide also provides a generic format for preparing travel orders so all civilian employees will

be afforded the same travel procedures and times. The guide thoroughly covers the requirement for passports and visas, while reminding employees that they are subject to the normal entry-exit customs requirements of each country.

The study team found pay and compensation to be major areas of concern for most employees and their commanders. While there is not a great deal of controversy surrounding pay entitlements, there is often confusion over the different types of remuneration available to civilians.

All General Schedule (GS) employees are subject to a congressionally imposed biweekly pay cap in that no GS employees can earn more than the maximum step of a GS-15. This biweekly pay cap was waived to an annual pay cap for Operations Desert Shield and Desert Storm and Somalia. This pay cap consists of all basic pay, overtime, and compensatory time when allowed. The pay cap does not apply to Wage Grade employees. Civilian employees may also be eligible for a foreign post differential (payable on the 42d day of temporary duty) or a danger pay allowance as determined by the Secretary of State. These allowances may not individually exceed 25 percent of the employee's base pay. All deploying AMC civilian employees must enroll in "sure-pay"—the direct deposit-electronic funds transfer program—to ensure continuation of pay.

Other personnel issues are of extreme importance to deploying civilians. Strength accounting procedures and the setting of tours of duty and hours of work are important to track individuals in a timely manner and to ensure consistency of treatment. More important is the treatment of life insurance benefits. The Office of Personnel Management has ruled that civilian employees enrolled in the Federal Employees' Group Life Insurance are entitled to accidental death and dismemberment benefits if killed or injured while supporting military operations. However, civilian employees may not increase coverage or enroll in Federal Employees' Group Life Insurance simply as a result of being notified for deployment. Commercial life insurance companies are not bound by these rules, and each coverage decision is made on a company-by-company basis. Unfortunately, this could mean loss of coverage for some employees without a resulting benefit being provided by the Government or a private life insurance company.

Equipment, Training, and Return

Additional organizational and individual equipment is necessary to support deploying civilians. The normal requirements and authorization documents of the military units are taken into account to support a civilian contingent that might accompany the force. These equipment requirements include items such as trucks for transportation, chemical defensive clothing and equipment, weapons, uniforms, and any other organizational equipment necessary to support a force in the field. AMC headquarters is actively working with Headquarters, Department of the Army, in pursuing equipment packages to support the deploying civilians.

Finally, as the civilian employees are assigned to the LSE and deployed through the central departure point, they are provided special training. This training could consist of weapons and chemical equipment familiarization, legal issues, laws of war, rules of engagement, and the customs and courtesies of the host country.

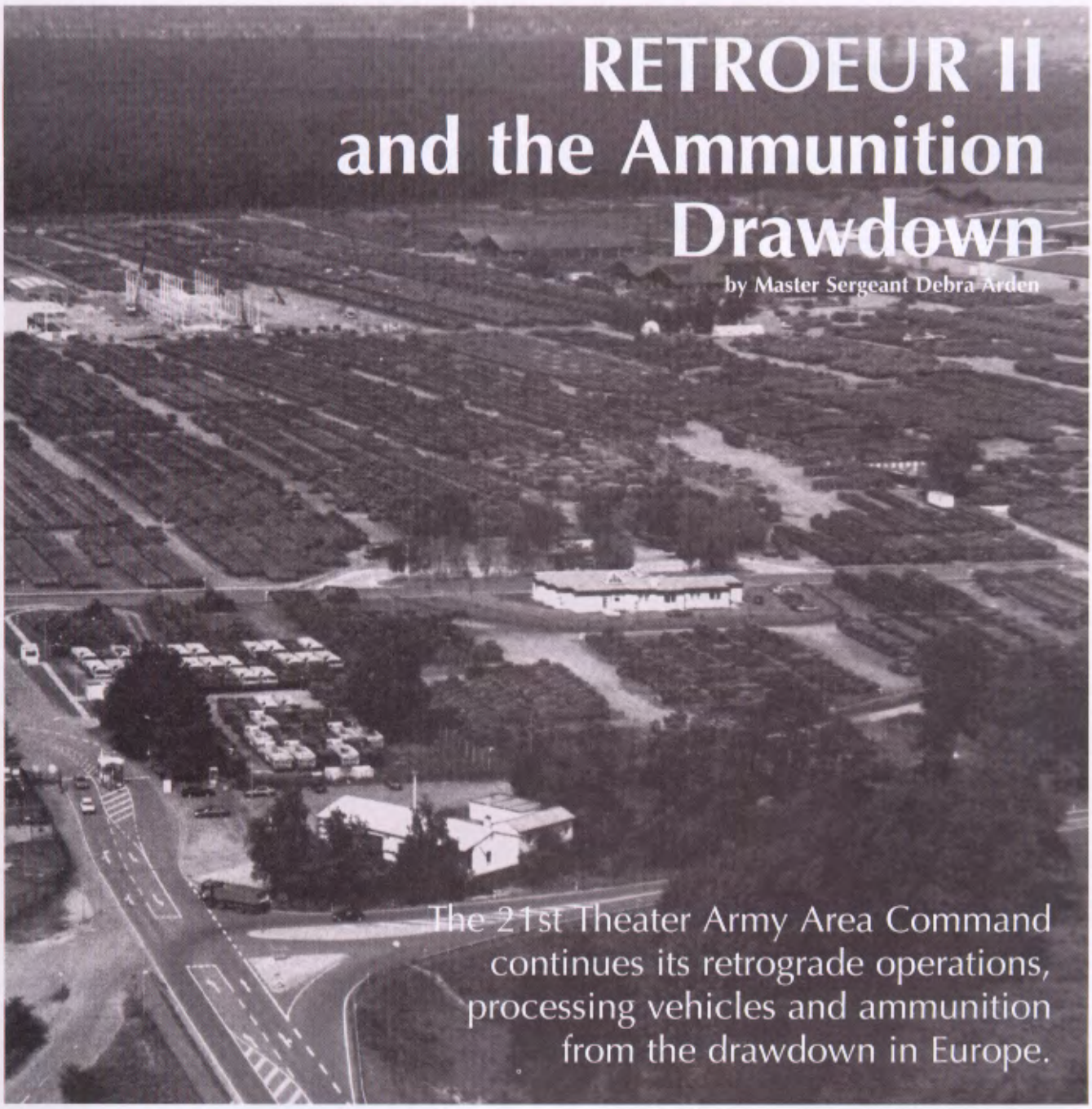
Individuals will also return to their home station through the central departure point so debriefings may be conducted, equipment returned, and another medical screening completed. Civilian employees killed, wounded, or captured during military operations are entitled to next-of-kin notification procedures similar to those for military personnel. Mortuary benefits for civilians include identification and shipment of remains, a flag, and an escort.

AMC is committed to providing its commanders and civilian employees with the most accurate and timely information possible. The *AMC Civilian Deployment* and *CPO Reference Guides* are outstanding initiatives of labor-management relations that detail the rights and responsibilities of all involved parties. The guides are being distributed through a series of information briefings throughout AMC. The guides have met with unanimous approval throughout the personnel and logistics chain of command within the Department of the Army and will help ensure a smooth and orderly civilian deployment process when the next call comes. Plans are underway to increase coverage of the guides to include all Department of the Army and Department of Defense civilians. ALOG

Larry L. Toler is a logistics management specialist at the Army Combined Arms Support Command, Fort Lee, Virginia. He holds a master of science degree in management and a bachelor of science degree in business administration.

RETROEUR II and the Ammunition Drawdown

by Master Sergeant Debra Arden



The 21st Theater Army Area Command continues its retrograde operations, processing vehicles and ammunition from the drawdown in Europe.

More than 20,000 pieces of rolling stock were stored at the General Support Center-Germersheim (GSC-G) in central Germany just 1 1/2 years ago Today, as a result of the retrograde of materiel from Europe (RETROEUR) program, that number is just over 14,000. The difference of about 6,000 pieces is misleading. During the time the RETROEUR program has been in effect, GSC-G has not only been redistributing and disposing of materiel but also receiving materiel from units drawing down in Europe. According to Lieutenant Colonel Jerry Thompson, deputy RETROEUR officer with the 21st Theater Army Area Command (TAACOM), in Kaiserslautern, 13,000 pieces have been moved from Germersheim and 7,000 pieces have been received.

The General Support Center-Germersheim holds thousands of excess vehicles and short tons of other military materiel that must be redistributed.

Germersheim is the largest of three facilities in

the 21st TAACOM that are retrograding materiel. Other facilities are located in Kaiserslautern, Germany, and in Luxembourg. Altogether there are now 21,648 pieces of rolling stock, according to Colonel William Kyle, 29th Area Support Group commander.

Before the drawdown started in fiscal year (FY) 1990, there was enough reserve materiel to sustain 26 divisions. At end-state in FY 1995, these sustainment stocks will be reduced until they support only one brigade. Stocks of pre-positioned materiel configured to unit sets (POMCUS) that supported 12 brigades and 6 division headquarters will be reduced to support 5 brigades and 1 division headquarters. In 1989, the forward deployed forces totaled 213,000 soldiers, making up 2 corps, 4 2/3 divisions, 2 armored cavalry regiments, and 2 corps support commands. At end-state, the forward deployed forces will have 65,000 soldiers, making up 1 corps, 2 divisions, and 1 corps support command.

"It is easy to find a home for soldiers who are leaving," Colonel Thompson said. "It is not so easy to find a home for the equipment. We've been working very hard this past year to find homes for the equipment." The process used involves a four-step concept of operation: identify the excess materiel, classify the condition of the excess materiel, determine the end-users, and move the excess to the end-users.

A variety of programs exists for redistributing the excess. These programs include the pre-positioned (prepo) afloat program, where the last of eight prepo ships was loaded in April at Antwerp, Belgium; NATO's equipment transfer program; foreign military sales; and sales at Defense reutilization and marketing offices (DRMO's). Other excess materiel will be used to fill shortages of materiel authorized for the end-state forces of U.S. Army, Europe (USAREUR), and for POMCUS.

"DRMO is the last program," Colonel Thompson said. "At DRMO they go through the entire process again and, as a last recourse, if they do not get rid of it through another program, it will be sold as scrap."

Probably the biggest challenge in the process of redistributing excess materiel is that as the retrograde stockpile keeps growing, the local national work force is decreasing. "The challenge is that as we're losing trained workers, we still have to move the equipment," Colonel Thompson said. "It is a huge challenge for the 21st TAACOM. Some of the people we're losing have been at Germersheim for 20 to 30 years.

"We're doing a lot of reorganization. A lot of this is being accomplished by reserve component units. They come in and we employ them here at Germersheim to help us move the equipment. We could not do the mission without the reservists," Colonel Thompson said.

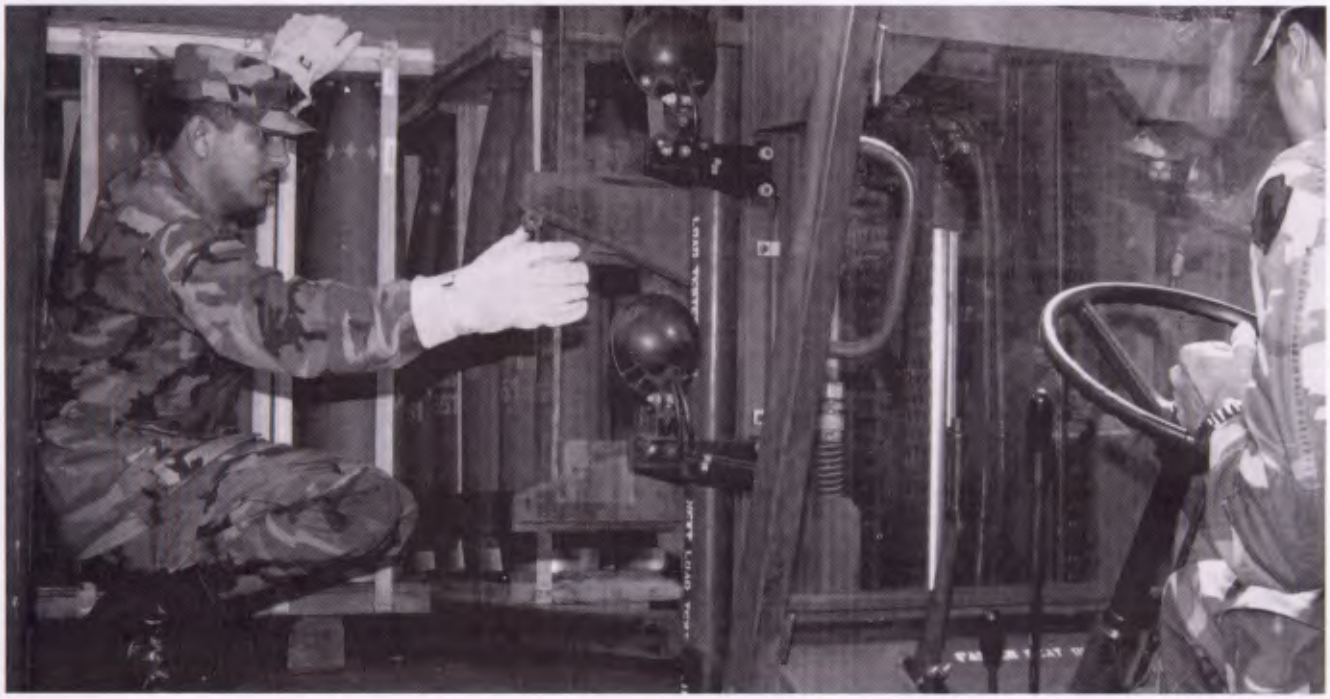
While the numbers clearly indicate that a lot of work has been done toward reducing the large amounts of excess in USAREUR, there is still a long way to go to complete the project.

Rolling stock is not the only retrograde challenge the 21st TAACOM faces. The retrograde of ammunition is equally as formidable and, probably, is the most demanding mission facing the only conventional ordnance battalion in the command. The 191st Ordnance Battalion at Miesau, Germany, is the last of four ordnance battalions in the 21st TAACOM. Three ordnance battalions have been closed since the drawdown began in FY 1990. The 191st Ordnance Battalion handles all munitions, other than special weapons, with storage sites at Miesau Army Depot, Weilerbach, and Kriegsfeld and has railheads at Miesau and Weilerbach.

Excess ammunition was generated from VII Corps' inactivation, returns from Southwest Asia, theater reserve drawdown, USAREUR unit reductions, and drawdown of POMCUS stocks to support four brigades, according to Colonel Thompson. From the start of the drawdown until the end-state posture was reached, over 767,000 short tons of excess ammunition were generated that must be retrograded or demilitarized. Loaded on 40-foot trailers, placed bumper to bumper, the convoy would stretch from Washington, D.C., to Boston, Massachusetts—over 415 miles.

According to Colonel Thompson, 533,400 short tons of excess ammunition had been redistributed by October 1991. As of July 1993, when the second

Reservists from the 266th Ordnance Company assist the 191st Ordnance Battalion in preparing ammunition for shipment.



Reservists from the 266th Ordnance Company load projectiles on railcars in Miesau, Germany.

phase (RETROEUR II) of the retrograde program went into effect, 233,600 short tons of ammunition were still considered excess. Colonel Thompson said that 110,000 short tons of ammunition will be moved in 1994 and 75,000 short tons in 1995.

Retrograding excess ammunition is an addition to the 191st Ordnance Battalion's usual mission, according to Command Sergeant Major Tom Johnson. "The everyday mission of the 191st is to receive, issue, ship, and renovate ammunition and guided missiles," Sergeant Major Johnson said. The battalion provides echelons-above-corps maintenance for land combat missile systems and provides theater explosive ordnance disposal (EOD) support, with EOD units throughout Europe.

According to Major Mike Lucas, the materiel officer for the 191st, reaching end-state involved site closure, drawing down force structure, and retrograde of ammunition. "It saved money, reduced overhead, and, as soon as the sites were closed, we reduced forces," Lucas said. "We have closed three battalions."

Ammunition inspector Staff Sergeant Jon Beatson said that once ammunition is drawn from the site at Kriegsfeld and transported to Miesau, a crew at the railhead receives the ammunition and cleans it. "The pallets of ammunition are taken off trailers with forklifts and loaded onto the railcars, where they're blocked and braced for movement to the seaport," Sergeant Beatson said. He explained that when ammunition is being moved, it has to meet rigid loading and customs specifications.

"We'll continue this year and next," Major Lucas said. "We're rotating Guard and Reserve units through Miesau and Weilerbach in order to accomplish the retrograde. We do not know what will happen in FY 1996. We're hoping the ammunition will be out of here, and we can rewarehouse and stock the remaining ammunition.

"We normally receive two ships per month. We work with 200th Theater Army Materiel Managment Center, 1st Transportation Movement Control Agency, and OCCA-North (Military Traffic Management Center). This level of coordination is what actually allows us to call ammunition from a site, load it on a railcar, send it to the port of Nordenham, Germany, and load it on a ship bound for the United States.

"At the 191st we track all the ammunition in 21st TAACOM," Major Lucas said. "We have about a year and a half to put ammunition from the drawdown into serviceable shape. After the retrograde, we look forward to the challenges of issuing training ammunition and maintaining the ammunition storage sites at Miesau and Weilerbach." ALOG

Master Sergeant Debra Arden is chief of public information in the Office of Public Affairs, Headquarters, 21st Theater Army Area Command, in Kaiserslautern, Germany.

Mutual Logistics Support in Korea

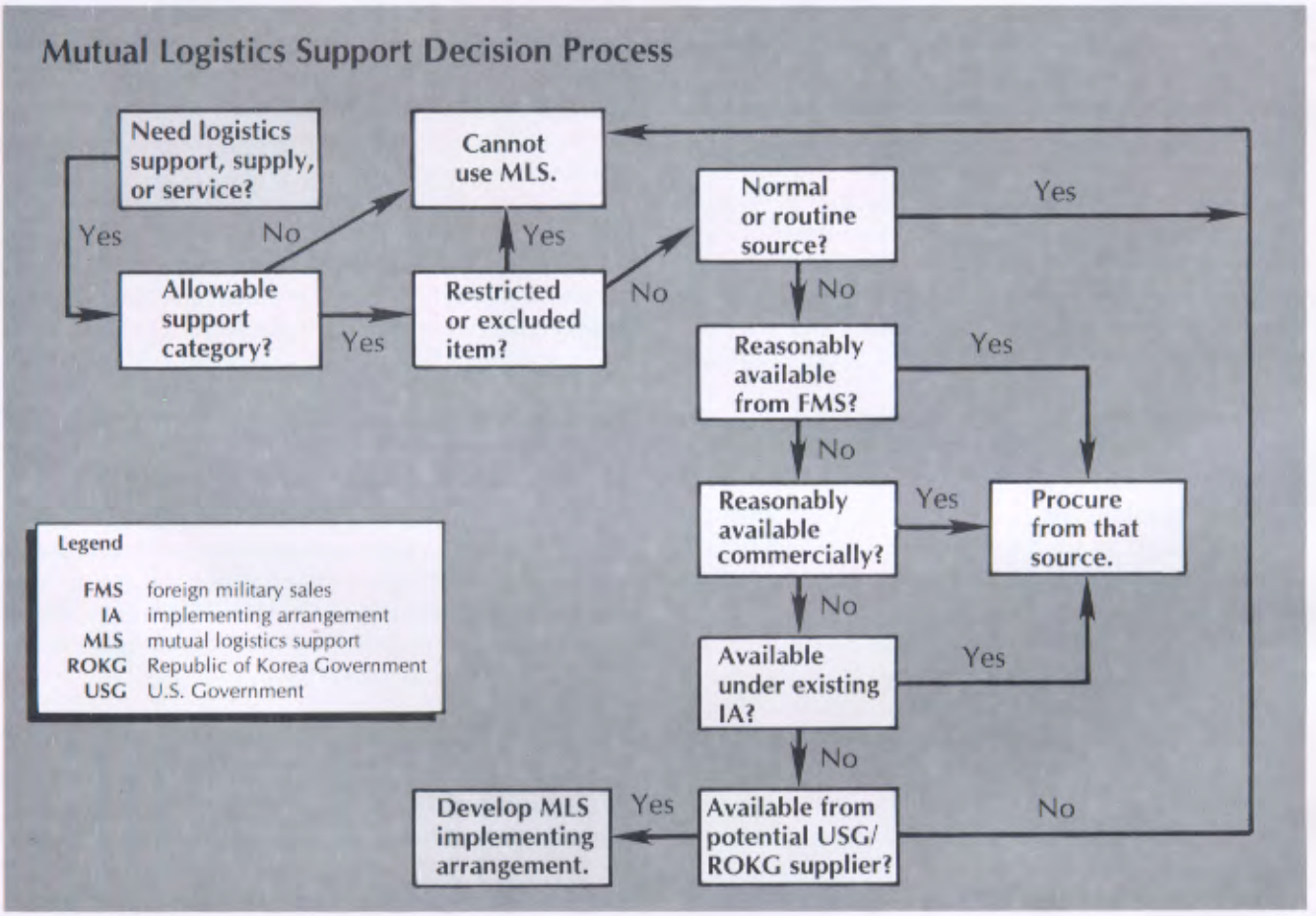
by Captain Anibal Mulero

The mutual logistics support (MLS) legislation provisions of Title 10 U.S. Code 2341-2350 simplify the exchange of logistics support, supplies, and services between U.S. Forces Korea (USFK) and the Republic of Korea (ROK) armed forces. MLS legislation contributes to the readiness of forces deployed in the ROK and elsewhere in the world. The legislation provides that certain provisions of law will not apply in the case of acquisitions from the governments of designated countries and authorizes cross-servicing agreements and specified applicable pricing principles. The legislation also addresses liquidation of credits and liabilities accrued by the United States.

MLS legislation provides two separate forms of authority. First, it authorizes acquisition of logistics support, supplies, and services from the ROK armed forces and establishes replacement-in-kind authority for many categories of support not previously available. This is a special, congressionally granted authority that allows limited exceptions to the Federal acquisition regulation.

Secondly, MLS legislation authorizes the United States to sell logistics support, supplies, and services to ROK forces and to exchange these logistics requirements with ROK forces. The basic MLS agreement, signed 8 June 1988 and amended 5 February 1991, is a special, congressionally granted authority that allows limited exception to the foreign military sales (FMS) program.

MLS cannot be used routinely as a source of supplies and services when they are reasonably available



from U.S. or ROK commercial sources or may be acquired through FMS procedures under the Arms Export Control Act. The MLS agreement is designed to facilitate MLS between the United States and ROK. It is to be used primarily during combined exercises, training, deployments, operations, or other cooperative efforts, and for unforeseen circumstances or exigencies in which the recipient may have a temporary need for logistics support, supplies, and services.

Typical items or services allowed under the MLS agreement are—

- Petroleum, oils, and lubricants (POL) and POL services.
- Personnel support.
- Transportation and transportation services.
- Base operations support.
- Spare parts and repair and maintenance services.
- Communication services.
- Medical services and supplies.
- Storage.
- Munitions.
- Training services.

Items that may not be acquired or transferred by the United States under the MLS agreement are—

- Weapon systems.
- Major items of equipment.
- The initial quantities of replacement parts and spare parts to cover table of organization and equipment and table of distribution and allowances shortages.
- Cooperative airlift.
- Guided missiles.
- Naval mines and torpedoes.
- Nuclear ammunition and associated items.
- Cartridge and propellant-actuated devices.
- Chaff and chaff dispensers.
- Guidance kits for bombs or other ammunition.
- Chemical munitions, other than riot control.
- End items valued at $172,000 or more.

The MLS agreement requires compensation for acquisitions and transfers of logistics support, supplies, or services by the following methods—

- Reimbursement in which payment is made in the currency of the supplying nation.
- Repayment by replacement with identical or substantially identical support, supplies, or services.

During any fiscal year, USFK has a ceiling allocated among three component commands of $10 million for total spendable (buy) transactions, $10 million credit (sell) for reimbursable (cash) transactions, and a 25-percent supply ceiling that may be spent on supplies other than POL. In short, USFK may buy up to $10 million a year and sell up to $10 million a year. No "new" money is provided for MLS. MLS is a simplified method of spending money that has previously been allocated to buy supplies, services, or support.

The basic MLS agreement establishes the framework for USFK and ROK armed forces to enter into general or specific implementing arrangements (IA's) to purchase, sell, or replace-in-kind logistics support, supplies, or services. USFK component commands use, whenever possible, a single, separate IA as the basis for both acquisition and transfer of logistics requirements.

There are currently 10 active IA's in effect between U.S. and ROK forces in the following agreements—

- Replacement-in-kind agreements, which include—

—IA's among Eighth U.S. Army (EUSA) and the ROK Army, Navy, and Air Force for bulk fuel.

—Fuel exchange between U.S. Navy and ROK Navy.

—Fuel exchange between U.S. Navy and ROK Air Force.

—Memorandum of understanding international between the U.S. 7th Air Force and ROK Air Force for mission-critical supplies.

- Transfer (sell) agreements, which include—

—IA between USFK and ROK Ministry of National Defense (MND) for railroad logistics support.

—IA between EUSA and ROK Army for battle simulation services.

- One active acquisition (buy) agreement, the IA between USFK and the ROK MND for Trans-Korean Pipeline Terminal Services.
- One active general replacement-in-kind (cash) agreement, the IA between EUSA and ROK Army for training and exercises support.

When planning for upcoming multinational or combined forces exercises, units may want to use MLS. The MLS decisionmaking flow chart on the left provides the correct and logical process to follow when considering MLS as a possible source of logistics support.

If your unit intends to enter into an MLS agreement with a ROK service component, make sure your references are up-to-date and that you follow the correct procedures. USFK Regulation 12-16, Mutual Logistics Support Between the United States Forces Korea and the Republic of Korea Forces, dated 13 April 1992; EUSA Regulation 12-16, Security Assistance and International Logistics, dated 1 April 1991; and Mutual Logistics Support Transactions, dated 1 April 1992, explain the specific procedures to follow when conducting MLS transactions. ALOG

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Maintaining Readiness Thr

Cutting stocks of repair parts without hurting readiness is a challenge for Army units. The author describes four tools used by the 1st Armored Division to improve repair parts management.

Just-in-time inventory, sparing to availability, SARSS-Objective, and lateral distribution have one thing in common: They all aim to reduce class IX (repair parts) inventories and expenditures. The dilemma, however, is how to reduce class IX stocks without degrading the readiness of the Army and its ability to project power anywhere in the world. I would like to present four common-sense management tools that any authorized stockage list (ASL) manager in the Army can use to better control his inventory of parts: warehouse walks, status management, requisitioning objective smoothing, and total asset visibility. They were developed and used in the 1st Armored Division in Germany. The examples I present use real data from 1992 and 1993 and assume the use of the objective supply capability; however, these tools can be applied regardless of the requisitioning system.

Warehouse Walks

The first tool is the warehouse walk, which involves actually examining parts on hand to see if they need to be stocked. This effort requires the ASL manager to check two of the main supply codes used in ASL management, the essentiality code and the stockage list code. The essentiality code identifies the significance of each part to a weapon system. Six of the most commonly used codes are C, D, E, F, G, and J. "C" designates a part that is essential for maintenance; without that part, the vehicle is deadlined. A "D" part is required for operator or crew safety; an "E" part is needed to meet host-nation or legal requirements or climatic conditions; and an "F" part is used only for depot-level maintenance. "G" designates nonessential repair parts, and "J" indicates parts for which replacement may be deferred.

ASL managers can extract essentiality-code data for their entire ASL and begin to identify potentially nonessential parts. Maintenance and supply technicians should then go to the supply support activity (SSA) and examine each part to determine whether it is truly nonessential. For example, crossmembers can deadline the high-mobility, multipurpose, wheeled vehicle (HMMWV), but they have an essentiality code of "J" (replacement can be deferred). The inner axle seal of the heavy, expanded-mobility, tactical truck (HEMTT), on the other hand, is coded "G" (nonessential). That is why physically walking the ground is critical. Such dis-

ough Reduced Inventory

by Jeffrey R. Tronvold

crepancies should be relayed to the materiel management center (MMC) so that a formal challenge to the coding can be prepared and routed through the Army's Catalog Data Activity.

While checking suspect repair parts, technicians should also look for other items that are coded as essential but should not be stocked. Camouflage nets and poles are all coded "C" (essential), but they are extremely bulky and are usually just a seasonal requirement. Chock blocks for vehicles are another good example. Merely by investigating essentiality codes, an ASL manager is likely to decrease the overall number of lines stocked by 10 to 15 percent.

The manager should also examine the distribution of stockage list codes in the SSA. Our philosophy in the 1st Armored Division was to have purely demand-supported ASL's. We therefore questioned any "L"-coded lines. [The requirement for "L"-coded lines was recently deleted; see Unit Supply Update 14 (AR 710-2, Supply Policy Below the Wholesale Level), dated 28 February 1994.] Items coded "L" were non-demand-supported items that required mandatory stockage; they included mandatory-parts-list stockage. We reviewed the demand history data for these parts to determine if they should be retained or deleted from the ASL.

Items with a stockage list code of "M" are non-demand-supported items (usually locally directed or seasonal items). The manager should examine "M"-coded lines closely because they are rarely justified. One reason to code a line "M" is if the part had previously been handled as a maintenance transaction and is now going to be a supply transaction. This often occurs when parts go to and from the reparable-exchange listing, or when a certain item has been the subject of numerous, high-priority call-in requisitions and demands are not recorded in the direct support unit standard supply system (DS-4).

The results of monitoring parts against essentiality and stockage list codes in the 1st Armored Division are shown in the chart below. One may notice an increase in parts with essentiality code "F" (needed for depot-level maintenance). These parts were primarily parts used to repair M1A1 tank engines in the direct-support-plus program.

Status Management

The second step in improving ASL management is status management. There are two levels at which status needs to be managed. The first involves the Defense automatic addressing system (DAAS), which controls and processes all status for requisitions throughout the world. Each requisition that leaves an activity and passes through the gateway should have a one-letter code entered in card column 54; this is called the distribution code. Another code, called the media and status code, is entered in card column 7. If column 54 contains a significant entry, such as the code for a corps MMC, then the status is sent to that activity. However, if there is no code in column 54, the code in column 7 usually tells DAAS to send status directly to the requisitioner or supplemental address. When status is sent directly to the unit, instead of through the corps MMC, it usually arrives in a telecommunications center and never finds its way into the system. Having the proper distribution code is critical.

For example, a unit in Germany needs to enter the letter "W" in column 54. The "W" represents the 19th Corps MMC in the DAAS computer; entering "W" ensures that all status is routed through that location. If the distribution code is not entered on the

	Essentiality Code Stratification								Stockage List Code Stratification				
	Total ASL	C	D	E	F	G	J	Other (A&B)	Total ASL	Q	P	L	M
1 Sep	6265	4553	247	171	55	720	512	7	6265	5239	976	18	32
2 Oct	6372	4736	237	184	82	607	521	5	6372	5542	786	12	32
13 Jan	5705	4682	223	180	71	39	505	5	5705	4951	754	0	0

DS-4 analysis of the 1st Armored Division ASL found that parts were coded as shown above.

Nomenclature	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	DS-4 RCMD RO
M2A2 Engine	0	0	7	0	1	2	0	0	2	6	4	1	23	9
M1A1 TRU	0	1	3	5	4	9	4	4	6	17	26	7	86	18
M1A1 GPS	4	0	1	2	0	1	1	0	0	1	11	3	24	5

An analysis of annual demand for three items highlights the need for requisition objective smoothing.

requisition, there is another way to ensure that status is properly routed. DAAS operates with communication routing identifiers (COMMRI's). The COMMRI tells where to send status. The 19th Corps MMC may have RHFFMNK as its COMMRI. Through coordination with DAAS, individual units should have the 19th Corps MMC's COMMRI as their personal COMMRI for class IX requisition status. This means that if a requisition does pass to the wholesale level without a distribution code, DAAS will still send the status to the activity capable of processing and downloading it to the division—the 19th Corps MMC.

Along with wholesale status management, it is critical to manage status at the MMC level. Each morning, status run into the system's last cycle should be analyzed. The tactical unit financial management information system (TUFMIS) offers a great help. Each morning, the TUFMIS report will show status posted to requisitions. Often a manager will find a "CJ" or "CK" status, showing that the part is obsolete or not available. There are also "D8" status postings, which can point to problems with the selected items management system-expanded (SIMS-X) and division activity balance file. Each time these suspect status returns are encountered, the national stock number (NSN) of the item in question needs to be reevaluated. If the NSN is obsolete, it needs to be deleted from the ASL and the replacement NSN found and added to the ASL. If the item is non-stockage list, it is important to send a message to supported units telling them what is wrong and what they should do to get their desired part. Finally, all the NSN's should be flagged in the computer to error out. A file should exist for each NSN explaining the reason for the error and the course of action necessary for correction. This process pays great dividends in managing ASL zero-balance rates and improving customer confidence and satisfaction.

Requisitioning Objective Smoothing

The next two management tools are based upon the requisitioning objective (RO). However, before discussing the RO we need to remember that the Army trains in cycles. Divisions share training areas and rotate back and forth; during training peaks, requisitions naturally increase. Demands and requirements for parts fluctuate based on training densities.

The RO is the maximum quantity of an item that may be on hand or on order at any one time. The RO consists of three components: the operating level, which is 30 days in Europe; the safety level, which is 5 days in Europe; and the order and ship-

NSN	MATCAT	NOMEN	REC	EC	UNIT PRICE	RO QTY	CRNT RO	PREV RO	DS4 RCMD RO
2610 00 262 8653		TIRE PNE	H	C	176.00	0	299	0	854
2610 00 262 8653		TIRE PNE	H	C	176.00	0	3	0	1
2610 00 262 8653		TIRE PNE	H	C	176.00	0	10	0	9
2610 00 262 8653		TIRE PNE	H	C	176.00	0	4	0	7
2610 00 262 8653		TIRE PNE	H	C	176.00	0	34	0	30
2610 00 262 8653	K21PP	TIRE PNE	H	C	176.00	0	0	0	2
						Total	350		903

This chart shows how the 1st Armored Division used total asset visibility to reduce or redistribute its inventory of tires.

ping time (OST). The first two components are fixed and cannot be changed. OST, on the other hand, shifts according to the receipt of replenishment requisitions. Calculation of the OST figure to be used in determining RO is based on a minimum of three and a maximum of six replenishments; the shortest and longest shipment times are discarded and the remaining values are averaged. However, if there are fewer than three values available, a figure of 25 days is used for OST. These factors—operating level, safety level, and OST—are combined with the number of demands for an item and the quantity of that item demanded over the last year to determine a new, recommended stockage level.

As one can probably guess, taking a cyclic figure like demand for an item and dividing it as if demand is evenly distributed over the course of a year is problematic. In response, the 1st Armored Division developed requisition objective smoothing as a way of mathematically smoothing cyclic demands to determine an accurate stockage level.

An example of RO smoothing and its effect on major weapon systems is shown in the chart above left. The data displayed are for the M2A2 Bradley fighting vehicle engine, the M1A1 Abrams tank thermal reticle unit (TRU), and the M1A1 gunner's primary sight (GPS). These figures show that the division's demand for these items was greatest from March to June and October to December. Examine the TRU data: Over a 4-month period (September to December), the division ordered 56 TRU's. If the division's SSA stocked only the recommended level of 18 TRU's, the division would not be able to sustain operations during gunnery. More significantly, if we were at war, the SSA could not sustain combat operations. By reviewing the demand history and OST's and talking with technicians, we decided that 35 TRU's would be a better stockage level.

Let me add one word of caution. When running demand analyses, DS-4 makes many recommendations, 97 percent of which are valid and accurate. RO smoothing will pay off significantly on only a few, critical items that have variable demand histories.

DMD	QTY	ACTION CODE	UNIT RO	BT RO	DSU
606	2024	M1	299	299	A
24	51	M2	1	10	C
67	326	M2	9	10	E
93	271	M1	7	10	F
318	1103	M2	30	10	G
37	69	A	0	2	H
			346	341	

Legend

MATCAT = Materiel category
NOMEN = Nomenclature
REC = Recoverability
EC = Essentiality code
QTY = Quantity
CRNT RO = Current RO
PREV RO = Previous RO
DS-4 RCMD RO = DS-4 recommended RO
DMD = Demand
TIRE PNE = Pneumatic tire

Total Asset Visibility

This leads to the last management tool established by the division. When DS-4 produces the change listings for an ASL, those listings are separated by direct support unit (DSU) and lack many critical elements of information. The 1st Armored Division therefore developed a method to merge all the change listings, as well as all stock status, to create total asset visibility. The result is a document that provides full visibility of the entire division's assets for each NSN. Of special note, this document shows the materiel category and recoverability code for each NSN. Additionally, columns were added so that units could input their recommendations; the final stockage decision was entered in a column called BT RO. The example of tires for the 2 1/2-ton truck is illustrated in the chart below left. DS-4 recommended stocking 903 tires, but since many units had just returned from Southwest Asia, these numbers appeared suspect. So we used values from units not deployed as a guide to reduce stockage. By following the principle of management by exception, an ASL manager can point out where recommendations may be a little short, and at the same time correct some overestimates.

These are four common-sense approaches to improving ASL management. Because commanders' philosophies differ and divisions face different types of constraints, some or all of these tools may be hard for a division to incorporate. However, I believe the following statistics support their use. During the 9-month period from July 1992 to March 1993, the 1st Armored Division's ASL had only a 7-percent decrease in lines, mainly in nonessential items. However, during the same period, inventory costs decreased by 32 percent and the number of repair parts stocked overall by the division decreased by 52 percent. Not-mission-capable-supply equipment decreased by 55 percent, and there were minimal support problems during three periods of high demands. Thus, a tailored ASL, with breadth and less depth, evolved in support of the division. This ASL continues to serve the division well today. ALOG

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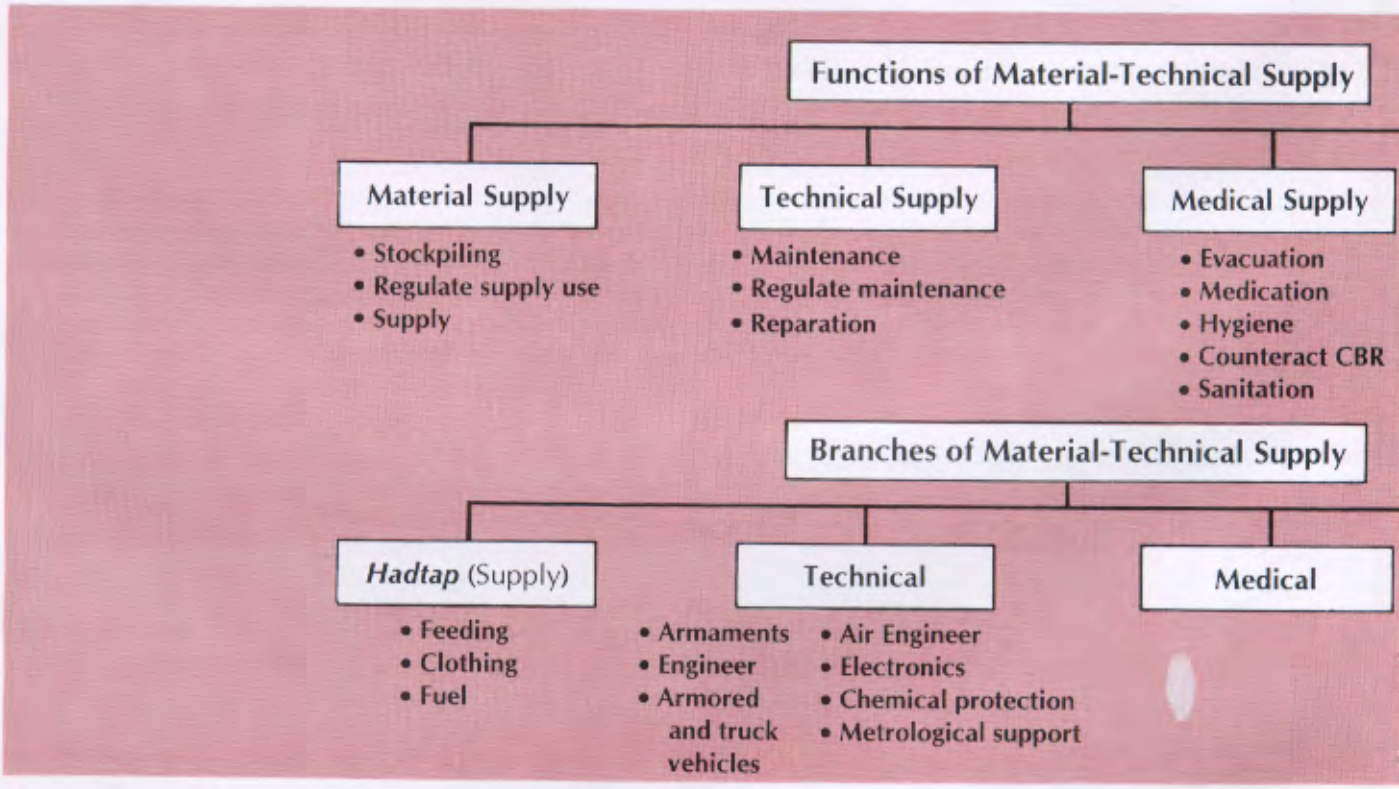
Logistics: A Hungarian Army

Nowadays Hungary has a lot of problems to resolve. Our young republic started to change her system of government in the late eighties and has continued into the early nineties. The withdrawal of Soviet troops, the collapse of the Union of Soviet Socialist Republics and the Warsaw Pact, and additional changes in this sensitive region require the reshaping of various policies, primarily in the area of security. Our neighbors'—Bosnia-Herzegovina—civil war also demands special efforts. Under these special circumstances the Hungarian Armed Forces must strive to accomplish its mission and increase the effectiveness of its logistics system.

The definition of *logistics,* according to the second edition of Webster's unabridged dictionary, is *"that branch of the military art which embraces the details of the transport, quartering, and supply of the troops in a military operation."* Recently logistics has taken on added meaning as a method of efficient organization and optimal utilization of human, material, financial, and communications resources. In other words, logistics is a modern military science; and it is the mission of its experts to determine present-day objectives.

In the future, the Hungarian logistics system will be a new and special support and supply system; at the same time, Hungary's logistics system will be different from both the logistics systems of the U.S. Army and the German Bundeswehr.

The Hungarian Republic is a small country (10-million inhabitants, occupying 93-thousand square kilometers), so it must build and reshape a very economical and efficient logistics system. There are a hundred-thousand people in the Hungarian Armed Forces during peacetime who need supply, support, and sustenance. Despite this fact, a large percentage of our military technical instruments are ancient and amortized; and during the difficult economic reforms of the country, our Army hasn't had enough



Branches and functions of the Hungarian Armed Forces Material-Technical Supply.

Challenge

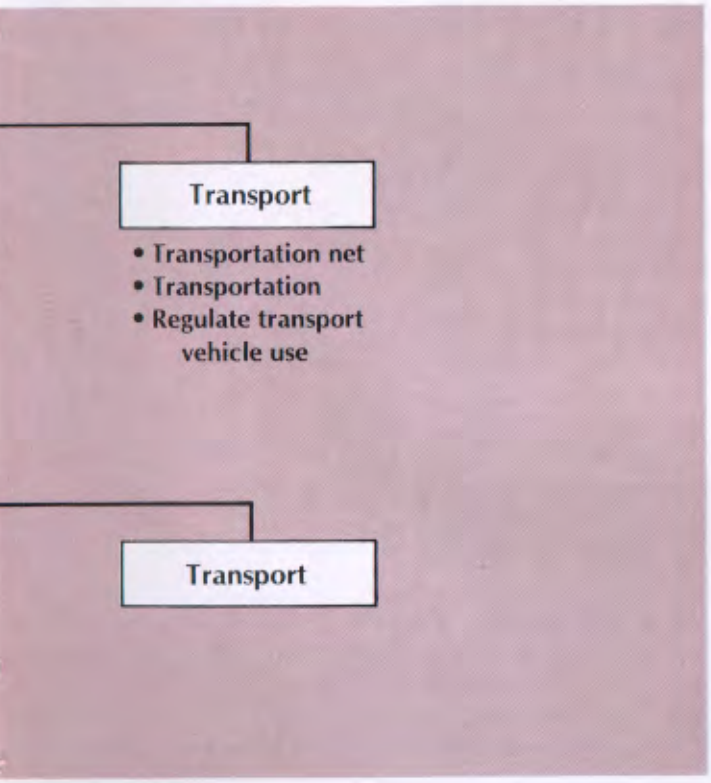
by Major Peter Lakatos

money for further development. The Home Defence Budget does, nonetheless, provide for the possibility of maintaining and augmenting the achievements of 1992.

Although there is a great difference between the United States and Hungary, the problems to be solved are almost similar. Operations Desert Shield and Desert Storm showed that future wars will be named "wars of logistics." But the American logistics community cannot rest on its achievements and must continue to reshape the U.S. Army logistics system.

General Jimmy D. Ross (now retired) wrote in the October 1991 issue of *Army* magazine about the tasks of—

- Reducing supply system costs.
- Consolidating supply depots.
- Changing clothing and textile policies.
- Stock-funding depot-level reparables.
- Consolidating maintenance depots.



- Streamlining the Army Materiel Command according to the Army management review.
- Consolidating commissaries.
- Reducing inventories.

Even though the Hungarian Armed Forces contributed only medical troops during Operations Desert Shield and Desert Storm, our reformed and modernized logistics system now has objectives similar to those General Ross outlined.

Colonel-General Kalman Lorincz, former commander of the Hungarian Army, spoke highly of 1992's achievements and said the Hungarian Army is up to its task. He outlined objectives to be accomplished in 1993. Among these, he determined that the leadership of the Material-Technical Command must start shaping the new structure of material-technical supply, as the Hungarian Armed Forces' logistics system is called. Furthermore its new structure should be integrated into the national economic system.

Our experts are currently working on a new logistics support system, and they want to work together with experts from developed countries and Hungarian civil science societies and research centers. Hungarian Armed Forces' technical development will start in 1995. Consequently, there must be a reshaping of a new and modern logistics system. It must develop an economical, rational, and advanced computer to aid in managing the logistics system. At the same time, a very important task is helping and supporting Hungary's people.

Although there are a lot of differences among our countries' armed forces, we can combine our common efforts to help each other through a mutual exchange of ideas, common experiences, and human and financial resources. ALOG

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Adding Value to Division Maintenance Readiness Inspections

by Colonel Karl W. Eikenberry

It is the final scene of the continuing drama, "The Battalion Task Force DRF-1 Assumption Story," as played in battalion conference rooms on divisional posts circling the globe. Late in the afternoon, the brigade, battalion, and company commanders, company executive officers (XO's), and commodity chiefs gather to anxiously await the findings of the dreaded chief of the "Division Black Hats." The Black Hats are officially known as the division maintenance readiness inspection (DMRI) team; the units must pass their inspection before they can assume their status as part of the division ready force (DRF-1).

Using a series of transparencies, the chief displays the performance of each task force team, company, and slice element on the recently completed DMRI. Separate breakdowns are provided for each commodity area inspected, such as wheeled vehicles; small arms; missiles; communications; and nuclear, biological, and chemical (NBC) equipment. All eyes are riveted on the bottom lines, which are the percentages of randomly selected items for each commodity area that are found fully mission capable.

In our tale, there are some success stories, but there are also some setbacks. All units were less than 75 percent fully mission capable on NBC equipment (C Company was only 51 percent); all of B Company's Dragons were deadlined on the spot; and 5 of the 12 wheeled vehicles examined in the battalion were not up to standard. Chief Black Hat states that the problem is poor operator maintenance and first-line supervision. The audience has a feeling they have heard all this before. Chief Black Hat departs, leaving the brigade commander shaking his head in disgust at his "Gang Who Can't Maintain Straight."

Collective hand-wringing and self-recriminations follow. Nothing can be solved immediately because the junior leaders and soldiers (who were not involved in the inspections, which were mostly conducted in unit commodity rooms) have been released for the day. By tomorrow, the sermon in all company orderly rooms will be to take maintenance seriously. Platoon leaders will religiously relate this message to squad leaders, who will solemnly nod and tell their soldiers to get with it.

Since no results were posted below the company level, no one is really sure how bad things are or what is really wrong, but at least they have mourned over the disappointing outcome for several minutes before turning to the business of the day. It is comforting to know that although this particular acting troupe will not have to perform again for another 4 to 6 months, few lines will be forgotten, and we can expect few, if any, changes to the story.

What is the Problem?

Those who have participated in DMRI's can usually relate to the above story. The question is, what has gone wrong? Why do we repeat a plot we all agree should be revised but instead persists? I would argue the problem lies in the structure of the inspection. The random search of the commodity rooms that characterizes most DMRI's does not reinforce chain-of-command responsibility, nor does it improve training. Company commanders, apprised of deficiencies at their level, frantically put out the fire before DRF-1 assumption and then move on to the next priority.

Inspection Groupings of a Light Infantry Battalion

Group	Companies A, B, C	Headquarters and Headquarters Company
A	All 1st rifle squads and antitank section	Scouts and medics and communications
B	All 2d rifle squads and mortars and rifle platoon headquarters	Antitank and support and company headquarters section
C	All 3d rifle squads and company headquarters section	Mortars and battalion staff sections

Meanwhile, the only ones with the real power to avoid a rerun in coming months (platoon leaders, squad leaders, vehicle commanders, and operators) remain in blissful ignorance, and the beat goes on. At the same time, some of the best maintenance trainers in the division (the DMRI team) are allowed to come and go; the sole beneficiaries of their collective wisdom are commodity chiefs rather than the first-line supervisors who, the results clearly show, most need training.

Such a harsh critique of the DMRI is unquestionably supported by Army doctrine. DA Pamphlet 750-1, Leader's Unit Level Maintenance Handbook, tells all leaders to "seek responsibility for maintenance and take responsibility for [their] maintenance actions" and to "enforce [their] commander's maintenance standards." FM 43-5, Unit Maintenance Operations, states that all leaders, down to and including those at the squad and team levels, are the "key players in sustainment." I point this out as a reminder that, although the "buck stops at the commander's desk," a unit that maintains well will be composed of junior leaders who all feel the "maintenance buck" stops at their own desks, not their commander's. We should strive to develop such junior leader accountability in every way possible, including how we go about designing the DMRI.

Army training doctrine also confirms that DMRI's should promote training. FM 25-101, Battle Focused Training, tells us to "train to maintain" and to "train the trainer to train soldiers to meet Army maintenance standards." Unfortunately, given the hundred other priorities the company commander struggles with daily, it becomes easier to chant these words than it does to put them into action. Unlike the most sophisticated junior-leader maintenance training session—which can be planned months in advance by a company commander but canceled at the last minute—a DMRI is not going away. A DMRI is in fact one of the few items on a training schedule that will inevitably occur as planned. Battalion and company commanders should use this certainty to their advantage and make the DMRI the quality maintenance-training event that they often have difficulty planning and executing.

Preparing for DMRI's

DMRI's should be organized so that small units and their leaders are full participants. I will illustrate using a light infantry battalion as an example, but the procedures are applicable to most units. Several weeks before the DMRI, the battalion XO must coordinate with the DMRI team chief and decide the type and quantity of commodities to be inspected. The battalion XO can then work with the company XO's to form groupings of small units that, in aggregate, will meet the team chief's inspection quotas.

For example, let's say the team chief tells the battalion XO that 20 percent of NBC equipment, communications gear, night-vision goggles, and small arms must be inspected for each company. The battalion XO then arranges the inspection groupings of the squads and sections of each company into three groups—A, B, and C (see chart on page 18). The team chief can then notify the battalion XO early on the morning of the DMRI that he will inspect group A for NBC equipment, group B for small arms, and group C for communications equipment and night-vision goggles. In this way the random, representative nature of the inspection is preserved. Since units are unaware of the specific items to be reviewed until the day of the inspection, they are unable to stack the deck.

Upon notification, the groups collectively prepare their designated commodity items for inspection by the DMRI team at times and locations agreed upon by the battalion XO and the DMRI team chief. Small units in each grouping display the assigned commodity items, regardless of whether the operators are present for duty that day. This will ensure that inspection quotas are fulfilled, reinforce small-unit cohesiveness and junior leader responsibility, and prevent units from biasing the inspection sample. During the inspection, the squad or section leader, along with the unit commodity chief, accompanies the DMRI team representative as he examines the equipment. DMRI team members record the results on DA Form 2404, Equipment Inspection and Maintenance Worksheet.

The DMRI team members also train as they inspect. For example, as an NBC inspector registers each operator-level fault during his look at protective masks, he points out the error to the squad leader and soldier and explains how such deficiencies might be avoided. Correctable errors are remedied on the spot.

Briefing the Units

Upon the conclusion of the battalion inspection, the specifics of the DMRI team debrief are modified to take into account the emphasis now placed on small-unit accountability. Attendance at the debrief is expanded to include platoon leaders, sergeants, and squad and section leaders, all of whom should be seated by company to enhance unit identification. The manner in which inspection results are aggregated and exhibited should reflect the small-unit focus.

It should be pointed out that the division G4's charter is to judge the maintenance readiness of the battalion task force, not companies, platoons, or squads. The DMRI team has neither the time nor the personnel to go about the "microanalysis" we are seeking. Consequently, a battalion XO should be proactive and actually provide the DMRI team chief with a set of

blank slides that best support the battalion commander's training objective but still convey the essential information required by the division standing operating procedure for DMRI's. The battalion XO can also offer the team chief assistance in compiling results and completing the transparencies; the XO's familiarity with the names of small-unit leaders makes such service invaluable. An example of how such inspection findings might be displayed is shown in the chart on page 21.

Alternatively, the battalion commander may not choose to have squad and section leaders attend the DMRI results backbrief, in which case he would substitute "platoon leader" for "leader" on the results transparencies. The names of those in the target audience should be those on display. The goal is to develop junior leader responsibility, and the techniques we adopt must support that goal. However, if the battalion DMRI backbrief does not include squad and section leaders, company commanders must prepare the appropriate transparencies, assemble their subordinates, and conduct their own backbriefs. In fact, commanders should approach the DMRI as a "maintenance external evaluation" and pay careful attention to the feedback methods they use.

While the division G4 is not staffed, or even expected, to support this type of DMRI, what I have outlined does not add to the inspection work load. On the contrary, time is saved since operators and their supervisors are standing by their equipment and inspectors are not slowed down while commodity chiefs open locks. Some time is lost as inspectors convey tips and advice to those inspected, but that problem is quite manageable. The major obstacle is providing findings down to platoon or squad and section levels. Yet close coordination between the battalion XO and the DMRI team chief will lead to success.

Making the Most of DMRI's

Formal or informal recognition by the battalion commander of the willingness of the G4, team chief, and team members to embrace his plan will facilitate future efforts to conduct similar DMRI's. While it would be convenient for a battalion commander if his division or brigade structured DMRI's according to my plan, I can say from experience that it is entirely possible for him to work directly with the division G4 to accomplish his objective.

Commanders and staff can greatly expand and improve this simple plan as a means of promoting maintenance training and junior leader accountability. For example, the battalion commander can allocate several days in his long-range training plan for intensive maintenance training and preparation before the DMRI (which will often be necessary since units assuming DRF-1 are completing rigorous, collective field training). With the specter of an inspection looming in which all junior leaders now have a known and highly visible stake, interest and attendance dramatically and predictably rise. Thus, the battalion commander and staff should seize the moment to organize quality leader and operator maintenance training, using all available resources from the brigade, division support command, and maintenance assistance and instruction team. Additionally, time should be allocated to show junior leaders how to inspect equipment. Members of the DMRI team can provide tremendous assistance since they know the most common problems in the division. Arranging for them to visit before the DMRI and talk with leaders and commodity chiefs is beneficial. Finally, all units should schedule and conduct informal and formal inspections down to squad and section levels to allow junior leaders time to train and assess their own subordinates in the art of checking and taking corrective action.

The decision to involve all soldiers in the DMRI, of course, comes at a cost. First, soldiers may have to miss one day of physical training since most DMRI's must begin early in the morning. If soldiers are to draw and display equipment, physical training simply cannot be scheduled. Second, despite the enormous payoff the chain-of-command reaps from DMRI's that maintain a small-unit focus, soldiers may find little meaning in the DMRI if the day's only event is the inspection of his or her protective mask. To make the most of the day, a battalion commander may wish to have the command sergeant major and first sergeants conduct full layout inspections of soldiers' CTA-50 and DRF-1 packing list items concurrent with the DMRI. This would be cost effective because—

- Supervisors are required by regulation to periodically check the completeness of their soldiers' individual equipment, and the DMRI provides a good opportunity to do that.
- Individual-equipment and packing-list compliance inspections should be conducted before DRF-1 assumption.
- Maintenance training and leader accountability are as important to the good care of individual equipment as unit equipment, and this can be reinforced by organizing a thorough and demanding inspection.

In addition to the DMRI backbrief conducted at battalion (and possibly company) level, commanders should ensure that appropriate "lessons learned" are quickly summarized and disseminated. For instance, the battalion XO might arrange for commodity chiefs to meet and relate to their peers what went well and what did not. More important, junior leaders need

Sample Presentation of Inspection Findings

Commodity Area: Nuclear, biological and chemical (NBC)		Commodity Item: Protective Masks		
Unit: Company A				
Element	**Leader**	**Number Inspected**	**Number Fully Mission Capable (FMC)**	**Percent FMC**
1st Squad/1st Platoon	SSG Thomas	10	10	100
1st Squad/2d Platoon	SGT Jones	9	8	89
1st Squad/3d Platoon	SSG Vasquez	9	5	56
Antitank section	SSG Smith	13	10	77
Company Totals		41	33	80
Battalion Overall Percent FMC				92
Division Standard				90

timely feedback on more than outcomes expressed as percentages of equipment fully mission capable. Training occurs and future performance improves, when supervisors are informed of specific deficiencies and discuss among themselves how they can best be remedied. In other words, a forum and environment similar to that created for any collective after-action review should be established. Unit XO's should have commodity chiefs bring equipment to such sessions so the discussions are not abstract. These maintenance after-action reviews are best conducted at company level and should be performed as part of, or subsequent to, the formal presentation of the results. Junior leaders should be encouraged to freely voice their concerns (such as lack of resources) and to suggest solutions, while commanders should use such opportunities to re-emphasize the unit's maintenance philosophy and standards.

A commander must also reward superior performance after the results of the DMRI are known. Those commodity chiefs, operators, and supervisors who attain excellence should be recognized in front of their units. If award standards and quota allocations are determined before the DMRI, and if the S1 prepares generic awards that await only the addition of a name, social security number, and unit, recognition can be given the day after, or even of, the inspection. The creation of "maintenance heroes" sends a signal that maintenance is a priority. Additionally, leaders should incorporate the outstanding results on officer and noncommissioned officer evaluation reports. This is highly appropriate given the lip service we pay daily to training and maintaining as the primary tasks of our young officers and sergeants. Concurrently, substandard performance should not be overlooked. If a pattern of problems emerges, it should also be reflected on efficiency reports. A strong message about standards, priorities, and accountability should be conveyed in all cases.

Nothing I have recommended should suggest that maintenance is something that can be stressed only in preparing for infrequently occurring DMRI's and forgotten during the interims. On the contrary, maintenance must be emphasized and sustained continuously. However, all good coaches periodically "return to the basics" and review fundamentals. A team that fails to occasionally do that will be beaten, no matter how sophisticated its playbook. In this vein, DMRI's that are structured to identify small-unit strengths and weaknesses allow us to concentrate on blocking and tackling.

The real world of Army life is full of unanticipated brush fires. Good commanders welcome combat training center rotations because they know their units will be "fenced," and they will have 2 to 4 months to plan and conduct relatively focused tactical training. This is not necessarily right or wrong, it is simply the way things are. Similarly, a commander should look at an impending DMRI as a potential opportunity to conduct the best, most concentrated maintenance training during the entire year and to assess and improve his unit's maintenance systems and standing operating procedures. In a more general sense, such a well-designed, centrally directed enterprise leads to the kind of common challenges, shared experiences, and positive competition that greatly enhance unit pride and solidarity. ALOG

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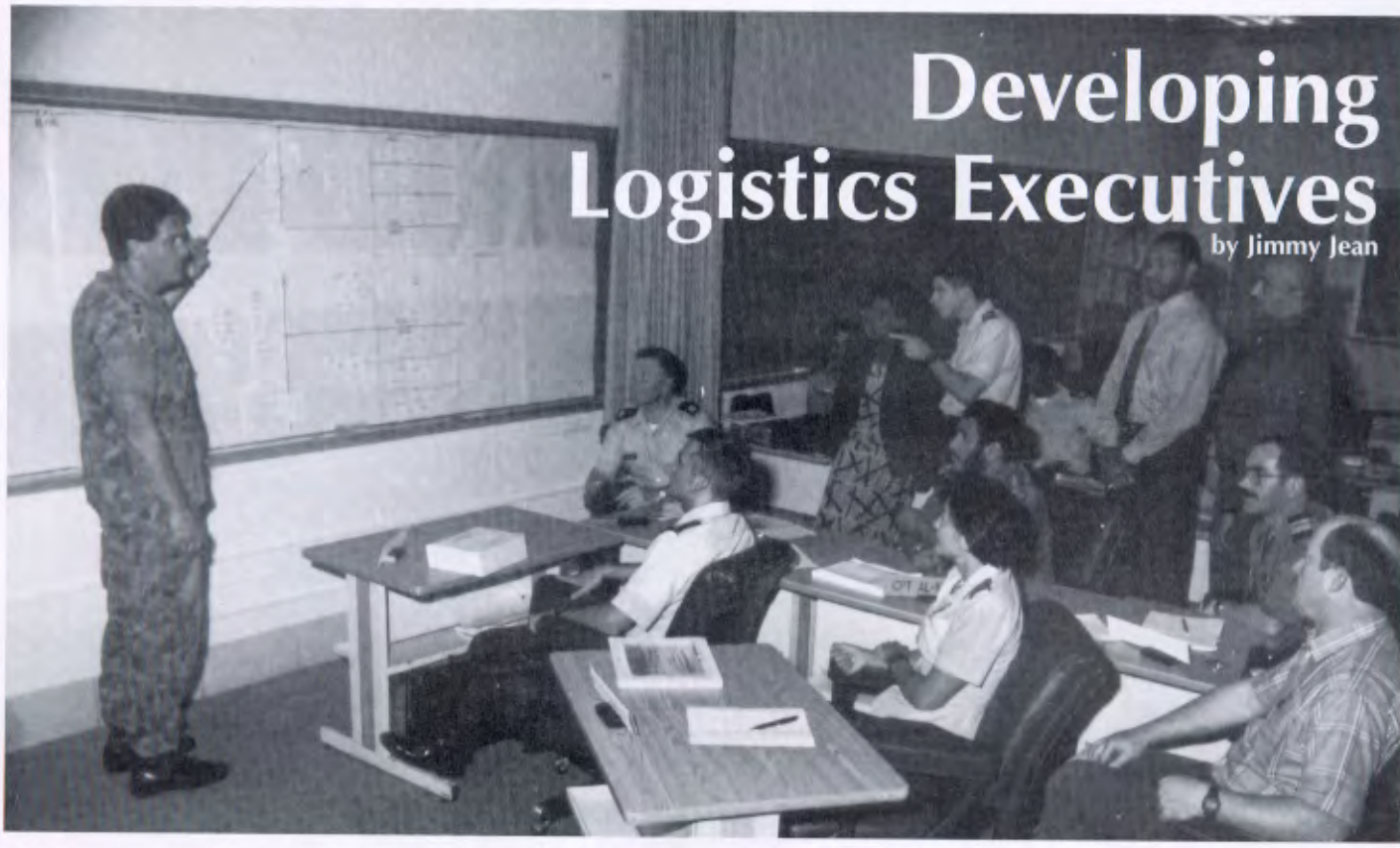

Developing Logistics Executives

by Jimmy Jean

During the past several years, as a result of many lessons learned, we have seen a remarkable shift in the Army's focus on the importance of logistics. This shift has emphasized the requirement to adequately train leaders in the *support* of war as well as in the *conduct* of war. At the same time, we have come to understand that managers must have both technical *and* functional training across a broad spectrum of logistics tasks. This multifunctional requirement has intensified the need for middle management logistics training.

The Logistics Executive Development Course (LEDC) and Associate Logistics Executive Development Course (ALEDC), offered by the Army Logistics Management College (ALMC) at Fort Lee, Virginia, provide that vital training to Department of Defense military officers and civilians (in grades GS-12 and above) and to foreign military officers. These courses have become recognized as providing premier senior logistics education and training for middle-management-level logisticians.

From resource management to combat logistics, the LEDC guides students through logistics plans and execution—from the factory to the foxhole—and offers comprehensive instruction in all facets of logistics. This intensive training provides students with a practical overview—as well as hands-on skills—needed to meet the unique and varied challenges of real-world logistics operations and functions.

Middle managers in logistics who meet the course prerequisites are given the opportunity to complete course requirements in a couple of different ways. One way to complete the program is to attend the 19-week, 4-day resident LEDC. The resident LEDC is offered twice each year, in the spring and again in the fall. It is an intensive program where both military and civilian students live, interact, and attend classes together.

The curriculum is designed to encourage learning in both formal and informal settings. It provides a balanced exploration of the continuum of logistics sustainment tasks—from the legislative planning stages to the use of end products in the field. The course curriculum includes not only classroom instruction but also continuous requirements to develop and refine professional research, writing, and speaking skills.

The LEDC curriculum includes comprehensive instruction and investigation into—

- Resource management.
- Acquisition management.
- Materiel readiness.
- Managerial economics.

The Army Logistics Management College's Logistics Executive Development Courses are educating and training middle-management personnel for logistics operations that span factory to foxhole.

- Decision sciences.
- Logistics strategy and policy development.
- Logistics military history.
- Combat logistics operations.
- Organization and personnel management.

Of special note is the fact that LEDC is a tough and demanding but thoroughly rewarding course for aspiring logisticians. LEDC graduates gain credibility in the field because they have met the high academic standards of this graduate-level college course.

Note, too, that LEDC is a participant in the Army cooperative degree program with the Florida Institute of Technology (FIT), Melbourne, Florida, which operates an extension site on the ALMC campus. LEDC students who enroll in the FIT graduate-degree program receive 12 semester hours of graduate credit from designated portions of the LEDC curriculum.

FIT offers a master's degree in five different disciplines in conjunction with the Army's cooperative degree program. LEDC graduates who wish to pursue an FIT degree stay at Fort Lee to complete a total of 33 graduate semester hours during the 7 months immediately following their graduation.

Both funding and seats for the resident LEDC are limited. Each class is ideally composed of and funded as follows—

- 40 U.S. military officers, who are funded by their respective branches.
- 24 Department of the Army civilians. Of those, 20 students are funded through the U.S. Total Army Personnel Command's central funding, with an additional 4 students funded by their parent commands or installations.
- 16 international officers, who are funded by their respective counties.

A second way for eligible individuals to complete the program, if they are unable to attend the resident LEDC, is through the ALEDC. ALEDC is a combination of both resident and correspondence modes of instruction. ALEDC is composed of five phases. In the resident mode, each phase has been tailored to a 2-week module. The correspondence version allows somewhat more latitude; however, both resident and correspondence students are required to complete all phases within a 3-year period, with a 1-year extension possible, if required. All personnel—civilians and military—who meet the prerequisites may enroll in ALEDC through correspondence, in residence, or through a combination of both options.

For officers of the Army National Guard and Army Reserve, the LEDC or ALEDC is valuable for yet another reason: completion of LEDC or ALEDC fulfills the educational requirement for promotion from major to lieutenant colonel. The ALEDC content was recently redesigned and updated to more closely align it with the resident LEDC content.

As the senior logistics course for military and civilian personnel, the LEDC is structured to provide first-rate training to experienced military and civilian logisticians. The Army Logistics Management College provides this training that prepares students to fill key management positions not only within the Army but throughout the Department of Defense. It also prepares them to logistically support America's Army in both peace and war. By doing this, the College fulfills the fundamental requirement to adequately train leaders not only in the conduct of war but also in the support of war.

Those who would like to enroll in LEDC or ALEDC and want to obtain more course and enrollment information may call DSN 539-4752 or commercial (804) 765-4752. ALOG

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Health-Care Logistics at the Ed

by Major David H. Pratt, Jr.

A prominent talk show host once described the Alaskan frontier as "the edge of nowhere." To some that is exactly where Bassett Army Community Hospital, located in the heart of the Alaskan interior, seems to be. It is this inherent remoteness that suggests to most medical logisticians and health-care providers that the logistics support available to the hospital would be slow and less responsive than that provided at other locations in the lower 48 states. Fortunately, that belief was only a perception and not a reality.

Organization

The Army Medical Department Activity, Alaska (MEDDAC-AK), a table of distribution and allow ances organization, is a tenant activity located at Fort Wainwright, Alaska. MEDDAC-AK's Bassett Army Community Hospital provides inpatient and outpatient medical care to a population of over 30,000 military personnel living at Fort Wainwright and in the adjacent metropolitan area. A staff of 426 officers, enlisted personnel, and civilians rely on the hospital's logistics staff to provide the supplies and equipment it needs to support an average of 576 outpatients and 26 inpatients per day. Ancillary support activities such as laboratory, radiology, and pharmacy place an addition-al burden on the system by completing more than 6,300 procedures each day in support of direct patient care.

MEDDAC-AK's command and control element provides guidance and direction to Bassett Army Community Hospital and its satellite activities located at Forts Greely and Richardson. Medical and dental clinics at Fort Greely support the Army's remote cold-weather training area, 100 miles south of the hospital. The Fort Richardson dental and medical clinics are located 350 miles further to the south and are reached by air or by one of Alaska's two intrastate highways. During the winter, highway travel is extremely difficult. Airline flights are subject to delay or cancellation due to rapidly changing weather conditions.

End of the Pipeline

Before 1991, MEDDAC's logistics division successfully waged a significant battle against a support system that had stagnated and suffered from a lack of focused management and leadership attention. The culmination of its efforts was revealed in an organizational structure that was well developed and well suited to accomplish the MEDDAC-AK support mission. The organization consisted of a well staffed division headquarters element, a medical materiel branch, a property management branch, a services section, a biomedical equipment maintenance branch, and a facility management section.

In spite of the best efforts of the logistics staff, the division's numerous successes were frequently overshadowed by problems resulting from MEDDAC-AK's location at the end of the logistics pipeline. The majority of these problems stemmed from the long lead times required to deliver routine medical equipment and supplies. Lead times for depot-stocked medical supplies ranged from 45 to 75 days. Repair parts for medical equipment often took 6 months or more to receive. The delays meant that patients went home without needed medications, and that equipment required to carry out an operation might not have been available when needed.

Bassett Army Community Hospital occupied one

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of the Army's oldest and least maintained hospital buildings. Constructed in the early 1950's, the hospital's physical plant had received little funding for maintenance or renovation during the last decade. Windows were rotting out of their frames. The interior of the facility badly needed painting, and many of the hospital's support systems were in serious need of repair or replacement.

Formula for Success

The key to fixing any bad logistics situation is to follow this simple troubleshooting process—

- Clearly identify the mission of the organization.
- Identify desirable and undesirable logistics outcomes.
- Align the logistics services defined in the mission with each of the desirable and undesirable outcomes.
- Focus on the undesirable outcomes and identify their root causes.
- Attack the root cause of the undesirable outcomes; eliminate barriers to success or build paths around them.
- Monitor services producing desirable outcomes to ensure that their status does not change.
- Evaluate the success of the action taken.

New Team Moves In

Two years ago, a new health-care logistics team was assigned to the logistics division at MEDDAC-AK. Its mission was to provide timely, cost-effective medical supply, equipment, and service support to the MEDDAC and Bassett Army Community Hospital and its satellite activities. The new logistics division chief was provided with explicit instructions from the hospital's major command (MACOM) to improve relations with the hospital's supporting agencies, fix the long lead time problem, improve support for the logistics division's customers, and raise their level of satisfaction with the quality and timeliness of logistics support. With the mission and desirable outcomes identified, the logistics division chief was able to investigate the services that the division offered and identify the undesirable outcomes that needed fixing.

The first task the new health-care logistics team tackled was an assessment of the logistics division's ability to accomplish the logistics mission with the personnel, equipment, and facilities that were available. Through the efforts of the former health-care logistics team, a new medical supply warehouse was constructed. The new facility was well set up and in excellent condition. The balance of the logistics di-

Bassett Army Community Hospital provides medical care to military personnel living at Fort Wainwright, Alaska, and in the adjacent metropolitan area.

quality. A good forklift was on hand, and the biomedical equipment maintenance shop had an adequate supply of tools. The logistics division's staff was motivated, eager to improve their logistics skills, and hungry for success.

The logistics division chief spent the first 3 months of his new assignment wrestling with the first four steps of the troubleshooting process. Input concerning desirable and undesirable outcomes was amply provided on a daily basis by the command and staff at the hospital, usually in the form of complaints. The input proved invaluable in determining exactly what was needed to support the physicians, nurses, and support staff working in the organization. The medical specialties that worked in the facility were noted for their wide divergence of logistics requirements. As a result, getting necessary supplies and services to the right place at the right time proved to be a considerable challenge.

By the end of the first quarter, a relatively short punch list of negative logistics outcomes had been identified as follows—

- The lead time for ordering and receiving medical supplies was excessive for the activities located at all three locations, Forts Wainwright, Greely, and Richardson. The long lead time had forced the medical supply warehouse to increase stocks of supplies substantially above the MACOM standard of 120 days of supply. The overage equated to more than $300,000 dollars in supplies. In addition to excessive inventory costs, demand satisfaction was well below management standards and zero balances were inordinately high.
- The lead time for medical equipment repair parts was also excessive. Equipment sorely needed for patient care remained unrepaired for long periods of time. The equipment repair staff was frustrated by its inability to repair key pieces of equipment in a timely manner. The patient care staff did not trust the support provided by the maintenance system.
- Because of the weaknesses of the existing logistics system, the system's customers—the patient care staff working in the hospital—wasted a considerable amount of time wrestling with logistics matters instead of treating patients.
- The hospital's physical plant was in poor condition due to a lack of investment in repair and upgrade of the physical structure and its utility systems. Pipe leaks were discovered on a daily basis; windows were crumbling and literally falling from their frames; electrical outages were frequent and unpredictable.
- The logistics division staff, while outwardly motivated, needed training concerning customer support and seemed unable or unwilling to innovate, or accept ideas for innovation from others.

There were also desirable outcomes of MEDDAC-AK's logistics support, such as—

- The turnaround time for ordering and receiving nonmedical supplies was exceptionally good.
- Property accountability was acceptable throughout the MEDDAC.

Having determined what was good and what was bad about the organization, the logistics division chief was in a position to draw up a plan and take action. Planning sessions were held with branch managers. Customers were consulted to determine what they expected from the logistics division. In the end, a 12-month plan was developed and staffed through the hospital's commander. The plan included the following approaches to the problems—

- Research and resolve depot ordering problems. Aggressively follow up on depot orders through the medical supply branch's new automated theater army materiel management system. When the depot is unable to respond with the necessary urgency, use local purchase procedures to fulfill the requirement.
- Identify a list of medical supplies that are critical to patient care. Make an extra effort to ensure that those items are always on hand.
- Use the success of the first two approaches to reduce the medical supply inventory to below the 120 days standard. Achieve the reductions in a way that does not jeopardize the ability of the patient care staff to treat patients.
- Reconcile biomedical equipment repair parts against outstanding work orders to ensure the accuracy of maintenance records. Use local purchase when necessary to close out open, aged work orders for pieces of key medical equipment.
- Push routinely demanded medical supplies to hospital activities to reduce the time the patient care staff spends doing logistics chores.
- Revitalize the relationship with the local directorate of public works (DPW). Become a member of the DPW team and work with them to identify and document hospital physical plant repair and renovation requirements.
- Obtain Health Services Command (HSC) support for necessary facility repair and renovation requirements.
- Investigate and renovate the transportation system used to deliver medical supplies and equipment to the Fort Richardson clinics.
- Train and empower the logistics division staff.

Results

Complex problems take time to fix. In this case, a second 12-month plan was required after the first year had passed, continuing the goals and objectives of the

A logistics technician uses a bar code reader to inventory a medical supply cart. Automation and the cart delivery system have resulted in an initial $40,000 return of excess medical supplies to the logistics system.

first plan. Halfway through the second 12-month plan, the large majority of the logistics division's goals had been achieved or were near completion.

Using a combination of approaches, such as critical item management and other techniques, the medical supply inventory was reduced to 113 days, a savings of 75 days of supply, or $375,000. This objective was achieved while maintaining a level of demand satisfaction that exceeded 90 percent throughout the process.

Eighty-five lines of medical supply were identified by customers as critical to the patient care mission. Each of those items was individually managed by the materiel branch staff. Zero balances for critical items were maintained at or below 4 percent after the first 6 months of the inventory reduction effort. Near zero balances (lines of supply within 10 percent of zero balance) were routinely maintained at or below 5 percent of stock. Using the near zero balance management indicator enabled the inventory management staff to focus on those items most urgently needed by the patient treatment staff and to anticipate and avoid out-of-stock conditions.

Early in the project, members of the HSC and depot staffs suggested an innovative approach to the long transportation lead times for medical supplies: medical express (MEDEX). A spinoff of "dedicated truck" delivery programs, MEDEX used a dedicated air transport contract to ship medical supplies to Army and Air Force medical activities in Alaska and Hawaii. As a result of the MEDEX initiative, the lead time for depot-stocked items dropped from a minimum of 45 days to 5 days. That reduction in lead time resulted in a corresponding reduction in the materiel branch's requisition objective by 40 days, or $200,000 in one-time inventory costs, and significantly enhanced the general responsiveness of the medical supply delivery system.

The Air Force has a major hospital at Elmendorf Air Force Base (AFB), which is a 10-minute drive from MEDDAC-AK's Fort Richardson medical and dental clinics. Through discussions with the Air Force hospital's logistics directorate, it was learned that the Air Force maintains a sophisticated, well-run medical logistics operation at the hospital. The Air Force also operates a medical clinic at Eielson AFB, 21 miles from the Army hospital at Fort Wainwright. The Eielson clinic was experiencing the same difficulty getting supplies from their parent logistics operation in Anchorage as our Anchorage clinic in obtaining supplies from the medical supply warehouse at Fort Wainwright. The solution to the Army and Air Force resupply problems was simple: The Air Force hospital's logistics operation at Elmendorf AFB started supporting the Army clinic at Fort Richardson, and the Army hospital at Fort Wainwright started supporting the Eielson AFB clinic. Transportation costs and delays were virtually eliminated by the agreement.

The biomedical equipment repair parts problems turned out to be a combination of vendor and internal management issues. Vendors that had sold the hospital medical equipment, such as dental operating units and patient beds, were not delivering repair parts to the hospital on time or, in some cases, were not delivering them at all. Once the biomedical equipment maintenance shop reconciled its work orders with the due-in listings for parts, problem vendors were identified and dealt with by the local contracting office. The reconciliation of the work orders, however, resulted in the greatest benefit to the organization. A lack of intensive management had resulted in inaccurate and unorganized work order files. An aggressive noncommissioned officer and some dedicated junior enlisted personnel cleaned the mess up in short order and quickly put the maintenance shop in top working order.

A cart delivery system was established to push sup-

nior enlisted personnel cleaned the mess up in short order and quickly put the maintenance shop in top working order.

A cart delivery system was established to push supplies to the logistics division's customers in the hospital. The response from the customers has been extremely positive and the time spent by the patient care staff on logistics matters has been substantially reduced. In one instance, the cart delivery system enabled the medical and surgical wards to clean out the supply room and turn in $24,000 in excess supplies, which were later issued to other activities.

When the chief of the logistics division approached the DPW to form a working alliance, he was met with open arms. As it turned out, the deputy chief of the local DPW was a past hospital engineer and possessed considerable knowledge of hospital engineering requirements. The resulting atmosphere of cooperation between the two activities resulted in over $4.5 million in facility renovation and repair projects that were identified and funded in the first year.

Once the alliance had been formed between DPW and the hospital logistics staff, it was only a matter of weeks before the MACOM joined the team and offered support. HSC initially sent a team of facility experts to examine the facility problems identified by DPW and the hospital. Two weeks after the first visit, HSC funded a $475,000 project to replace the hospital's crumbling windows. This project significantly improved the patient treatment capability of the facility and enhanced energy conservation efforts. Other major projects that were funded included a facility-wide electrical upgrade, steam valve replacement, liquid oxygen system upgrade, painting of the facility's interior, and numerous smaller projects.

During the course of the project to improve logistics division operations, a significant amount of time, money, and energy was invested in training and empowering the division's staff. Civilian and military training programs were used for that purpose. A monthly training program was started for all the division's medical supply specialists (military occupational specialty 76J). Both military and civilian staff members were encouraged to attend Government-funded local training courses in customer service, project management, and decisionmaking processes. Internal programs were established for the complex areas of hazardous materials-handling, regulated medical waste management, and safety. The investment seemed to pay off as the division's operations became more and more proactive, with fewer and fewer decisions being made at the highest levels. Delegation of authority and responsibility became the dominant approaches to getting the work done throughout each of the branches.

Validation of the progress that the logistics division had made over the last 2 years was offered by the HSC command logistics review team that visited the activity in October 1993. As a result of that inspection, the division received 14 positive (commendable) observations. The most significant observation indicated that the division's customers (the nurses, doctors, and administrative staff working in the hospital) felt that they were receiving outstanding logistics support. Other positive observations singled out the expertise of the division's lower ranking staff, their dedication to the job, and the numerous innovations that the staff had implemented on its own initiative. In two instances, the relationship with outside support agencies, such as the Directorate of Contracting and the installation Directorate of Logistics, was cited as a positive observation by the team.

But the success of the logistics team can be noted in more objective ways, as well. The reduction in operating levels of supplies in the medical supply warehouse netted a third of a million dollars in one-time savings. The increased availability of medical equipment and supplies has enhanced the ability of the hospital's staff to see patients, increased patient turnover, and improved patient satisfaction. Even the housekeeping contract, an area that delivered a satisfactory level of service in the beginning, was improved. The contract was rewritten by the logistics staff, combining separate contracts for all three installations at a contract savings of $300,000 over previous year expenditures.

Driven by a desire for excellence, the health-care logistics staff at Bassett Army Community Hospital has come a long way in the last 2 years, using improved management techniques and a solid business plan. The logistics division has a way to go yet before it solves all of the problems associated with its remote location. However, there is no doubt that MEDDAC-AK's logistics division, doing their job out near the edge of nowhere, will someday reach the goal of organizational excellence. Consisting of the hospital's command element, logistics personnel, patient care staff, MACOM staff, and installation support agencies, the MEDDAC-AK's logistics team is primed and poised for the next step toward total quality. ALOG

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Materiel Release Order Control System

by Al Barnes and Chief Warrant Officer (W3) Randolph J. Fleming

The model direct support unit at Fort Bragg is testing a new system that greatly improves management of materiel release orders at supply support activities.

It was obvious when the truck pulled up to the receiving dock that something was different about the way the 503d Maintenance Company at Fort Bragg, North Carolina, was doing business. Instead of unloading the supplies and moving them close to the unit computer terminal, the soldiers of the 503d took their bar-code readers out of the charging cradles and went directly to the unloading area. The soldiers then opened the incoming multipacks and scanned the bar codes to identify their contents. The bar-code readers transmitted the data via a small, ceiling-mounted antenna to a computer located in another part of the warehouse.

As the computer received and processed the data, it transmitted the receipt information for each scanned item back to a small printer mounted on the soldier's belt. That printer then produced, on gummed paper, a materiel release order (MRO) with all the appropriate data for stockage or issue. After peeling off the paper backing from the label and sticking it to the item, the soldier was ready to place the item directly into the requesting unit's bin or into the appropriate storage location. Meanwhile, in another section of the warehouse, other soldiers were picking stock for issue. The screen on their bar-code reader displayed the storage location of the items to be picked and the quantities required. As they took the items from the shelves and scanned them, the thermal printers on their belts produced the MRO for issue.

What makes this whole scene interesting is that it is not a scenario proposed for the future but one that is taking place every day at the 503d Maintenance Company. The 503d has been selected as the "model direct support unit" for the Army Quartermaster School's Supply Support Task Force, under the guidance of the Army Training and Doctrine Command's Combat Service Support Battle Lab. Its mission to test and evaluate new ideas and equipment includes using state-of-the-art radio frequency data collection technology.

The company is equipped with a radio-frequency hardware and software network known as MROCS (pronounced M-ROCKS), which stands for materiel release order control system. MROCS operates on a 486DX2/66 microprocessor with a UNIX operating system. This computer is linked to the computer that the 503d uses to run the standard Army retail supply system-level 1 (SARSS-1). Among the hardware peripherals associated with MROCS are 10 portable laser radio terminals with built-in bar-code scanners, 7 belt-mounted thermal printers, and 3 small spread-spectrum transmitters that pass wireless radio frequency signals between the portable devices and the MROCS computer. Three portable terminal cradles are used to recharge the bar-code scanners. Three remote terminals are also connected to the MROCS so that functions such as receiving, issue, and system management can be performed in separate areas of the direct support unit (DSU). A thermal-transfer printer and two dot-matrix printers are used to produce reports and print documents. The 503d is working with all of this equipment to test its potential for Army-wide application.

The company is using MROCS to enhance the daily operations of the DSU in such areas as item receipting, stock picking, customer issue, and shipping. Although MROCS has only been in place for 1 year, the response of soldiers to the concept and equipment has been overwhelmingly favorable. A quick comparison between the ways a standard DSU and an MROCS-equipped DSU operate clearly shows the reasons behind the favorable response.

Item Receipting

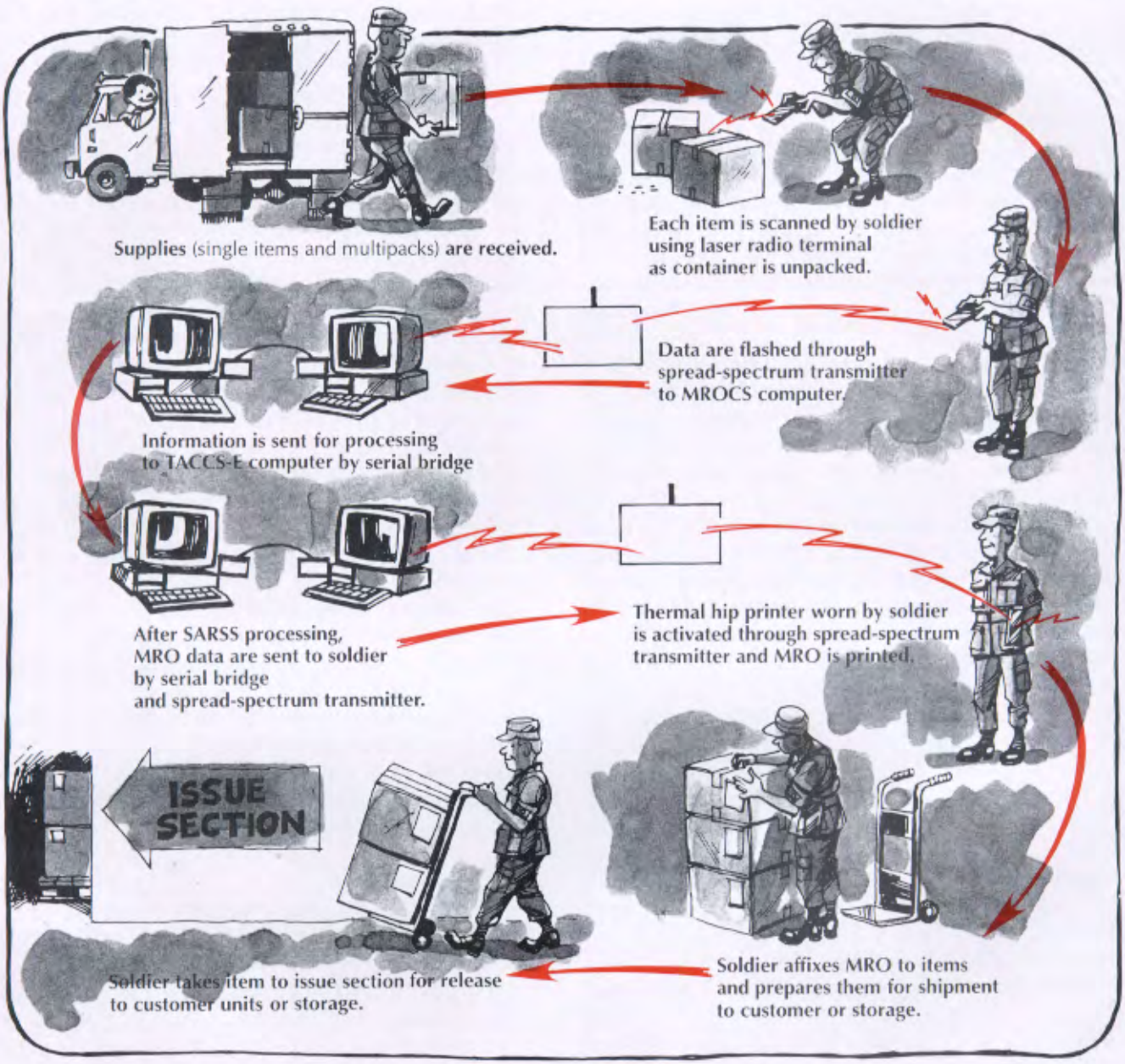
The standard response of a DSU to the arrival of class IX repair parts in multiwall boxes or pallets is to remove all of the items from the box or pallet and lay them out on the floor or tables. The items are then scanned with the bar-code readers, and the readers are returned to the computer site so their contents can be uploaded into the data base. After the file is uploaded, the computer produces the appropriate paperwork for

the items that have been received. The paperwork is then taken back to where the items are laid out and matched to each item. The items can then be placed in stock or in the bins of requesting units.

Compare this to the MROCS scenario, where the scanned data are fed immediately back into the system by radio-frequency transmission. Disposition information and MRO's are transmitted to the soldier and produced by the lightweight thermal printer mounted on his belt. Information for exception reports, such as unscheduled or erroneous shipments, is also automatically fed into the system. After spending some time at the model DSU and working with the receipting process, Chief Warrant Officer (W3) Mark Dauphinais observed, "Without a doubt, if I'm running the warehouse, I want MROCS." An evaluation of the item-receipting process has indicated that use of MROCS has resulted in a 500-percent increase in the number of items received and documented over the standard method of operation.

Stock Picking

The standard procedure for stock picking at a DSU calls for MRO's to be printed, sorted, manually logged into a book, and then distributed to the assigned soldiers. The soldiers, in effect, sign for the MRO, then go to the storage area and begin to pick the desired items. After completing the stock picking, or at the



Item-receipting process using MROCS.

end of a shift, a copy of each MRO is returned to the stock control point to confirm that the item was actually picked.

Under MROCS, the soldier's bar-code scanner tells him the MRO information and directs him to the correct storage area to pick the stock. As he scans the items and moves them to a cart, the radio-frequency antennas mounted in the warehouse and the adjacent storage yard report his actions back to the MROCS computer. The computer updates the SARSS files automatically. A side benefit of MROCS is that supervisors can immediately determine the status of a specific MRO while also monitoring the performance of the soldiers doing the work.

Customer Issue

One of the greatest benefits of MROCS becomes evident when issuing items to customer units. Under standard procedures, a soldier picking up repair parts from a DSU usually faces a lengthy wait while other customers are being served. He then must spend time recording document numbers and signing for each item. With MROCS, the process has been streamlined. When the customer shows up at the 503d, he hands the issue clerk an identification card. The identification card is bar-coded with information about the soldier and his unit. This card is scanned, and the shell of an issue record is created on the computer. As the items are removed from the unit bin and handed to the customer, they are scanned and the data are transmitted to the MROCS to build an issue listing. When the issuing clerk signals with the bar-code reader keypad that the last item has been issued, a complete issue list is produced. The customer can then sign for all the items at one time.

An evaluation at the 503d Maintenance Company has shown that using MROCS has produced an almost twofold improvement in service to the customer and reduced the time customers spend waiting to sign for and receive materiel. Another benefit is that DSU personnel know the exact date and time that specific individuals and units were issued specific items. This information is automatically maintained in the MROCS data base and can be used to respond to queries. The MROCS data base can also be used to determine if any high-priority repair parts are sitting in customer bins waiting to be picked up. With these features, MROCS helps increase the customer's confidence in the supply system.

Shipping

MROCS can also produce the documents needed to ship items from the DSU to another DSU or a general support unit (GSU). MROCS has the ability to produce required automated packing lists, shipping labels, and transportation control and movement documents (TCMD) to support shipping operations. This process has not yet been exercised because of the low frequency of shipping operations at the 503d; its main benefits will be seen at a GSU that has a more significant shipping requirement.

What really ties all of these processes together and makes the improvements seen in MROCS possible are the radio frequency data collection spread-spectrum transmitters that capture the data signals from the portable laser-radio terminal bar-code readers and pass them to the MROCS computer. These transmitters can either "talk" directly to the MROCS computer or be linked to other transmitters to increase their range or expand the area of coverage. This network allows the 503d to perform all of the functions described above at the same time.

Implementation of MROCS at the model DSU was funded by the product manager for automatic identification technology to see if Army DSU operations can be improved with the use of new technologies that are coming into use in the commercial world. The model DSU will continue to investigate other enhancements and technologies to improve the effectiveness of the Army's supply support activities. For now, the use of MROCS has proven to be a significant improvement. Chief Warrant Officer (W3) Larry Walsh, supply technician for the model DSU, is among those who believe strongly in the use of MROCS. Chief Walsh says, "One of the greatest advantages to MROCS is the reduction in time that I have to spend managing the issue and signing of MRO's. Soldiers here really appreciate it because it allows them to spend their time doing their job, not chasing paperwork." ALOG

Al Barnes is a logistics management specialist in the Logistics Automation Projects Office at the Army Combined Arms Support Command, Fort Lee, Virginia. He is a chief warrant officer in the Virginia Army National Guard and holds a master's degree in archeology from the State University of New York.

Chief Warrant Officer (W3) Randolph J. Fleming is a logistics automation officer at the Army Quartermaster Center and School, Fort Lee, Virginia. He is currently the Quartermaster School's project officer for the Combat Service Support Battle Lab's Model DSU initiative. He holds a B.A. degree in criminology from Saint Leo College and a master of education degree in counseling from Boston University.

DCSLOG Reports

The Deputy Chief of Staff for Logistics issues his fifth message, outlining logistics issues and concerns that affect America's Army.

"Again, the logistics capabilities of America's Army are challenged with the recent crisis in Rwanda." Thus, Lieutenant General Johnnie E. Wilson, DCSLOG, opened his fifth message to the field on power-projection logistics in mid-August. He reported that five ships, loaded with humanitarian and port-opening supplies and equipment, had been deployed to an area near Mombasa, Kenya. From Mombasa, the materiel would be transported 1,100 miles to Goma, Bukavu, and Kigali.

The joint effort of the Army, our allies, and volunteer organizations established clean-water distribution points, using reverse osmosis water purification units (ROWPU's); distributed rations; administered medical aid; opened the way for airdrops of materiel; and reversed the high rate of fatalities from disease.

"Our goal," General Wilson said, "is to stop the dying and eventually turn over control of the situation to the United Nations [UN] commissioner for refugees." A civilian contractor, Brown and Root, will eventually replace U.S. military personnel in providing overall logistics management, potable water, medical aid, and graves registration. The goal is to foster stability in Rwanda and encourage the return of refugees to their homes.

General Wilson continued—

> I am particularly proud of the reaction of logisticians around the world to solving the challenges of supply, distribution, and transportation in support of Rwanda. A hearty 'well-done' to all hands. The humanitarian effort in Rwanda is different from any other challenge we have faced so far. We will move tons of supplies and equipment over poor to nonexistent roads, on indirect routes, under uncertain conditions, and with possible hostilities, to bring relief to over 1 million refugees. No other force on earth is as capable of accepting this challenge and successfully completing the mission.

While the Rwanda response is the most visible UN-related activity, the DCSLOG reports Army logistics assistance to other UN efforts. We are providing armored personnel carriers and a support package to a Ghana battalion that is providing UN security in Rwanda; helicopters and wheeled vehicles to the Dominican Republic to support the Haitian embargoes; 200 commercial utility cargo vehicles to the Palestinian police force; and leaving some 140 pieces of equipment with the UN force still in Somalia. The DCSLOG warns, however, that our excess stocks are dwindling and we must be vigilant to avoid adversely impacting our own readiness.

Turning to other logistics actions, General Wilson noted completion of laundry testing and mixing and matching of the enhanced hot-weather battledress uniform (EHWBDU) with the existing hot-weather battledress uniform (HWBDU). Soldiers can expect the EHWBDU in clothing sales stores by October 1995.

The proof of principle test of the integrated sustainment maintenance concept was successfully completed by the Strategic Logistics Agency. The tests at Forts Carson, Colorado; Hood, Texas; and Riley, Kansas, on specific national stock numbered items produced annual cost avoidance estimates of $4.4 million. More will be reported on this concept as development continues.

The DCSLOG reiterated the importance of accurate reporting in nuclear, biological, and chemical defense equipment and in the continuing balance system-expanded asset accounting system. He also cited the need for continued compliance with ammunition control and accountability and to enforce Army technical manual -10 and -20 maintenance standards.

General Wilson asked for major command support in nominating maintenance units for the Secretary of Defense Phoenix Maintenance Awards. He said, "I ask for MACOM support to nominate America's Army units whose forward-deployed mission achievements deserve to be recognized by the prestigious Phoenix award." The award focuses on unique achievements at the unit, direct support, and general support levels.

General Wilson held his second video teleconference with logisticians at 25 sites in the continental United States on 8 September. Units in Europe, Japan, and Korea who can't be reached by teleconference can obtain copies of briefing charts and a video tape of the conference by requesting a copy from Barry Sayer, ODCSLOG, at DSN 224-8401, commercial (703) 614-8401, or through e-mail and Internet at "sayer @pentagon-hqdadss.army-mil." ALOG

JIT: Tell It Like It Is

by Thomas A. Reichert

In his article, "Just-in-Time, or Just Too Late" (*Army Logistician*, March-April 1994 issue), Michael McGee misstates some very significant transportation facts. Mr. McGee incorrectly claims that one reason the just-in-time (JIT) concept will not work in the military is that, unlike the private world, Government shippers are not permitted by regulation to guarantee business to a specific transportation firm. This is bull-*jit* since Department of Defense (DOD) shippers, under the direction of the Military Traffic Management Command (MTMC), have been doing just that since 1982.

The precedent for this practice is the deregulation of the transportation industry that began with significant Federal legislation for the motor-carrier industry in 1980. Concomitant with deregulation came tailored services, such as contract carriage for private shippers that later became known as *guaranteed traffic* for DOD shippers.

As a traffic management specialist at the New Cumberland distribution depot between 1982 and 1984, I was responsible for administering guaranteed traffic contracts with transportation firms. Since that time, DOD has saved millions of dollars in transportation costs and continues to provide more timely and service-oriented transportation to its customers—soldiers in the field.

A brief clarification of the guaranteed traffic program will more clearly indicate that DOD transportation managers have proactively adapted to advances in the significantly changed transportation industry. In his article, Mr. McGee contends that it is against Army regulations to guarantee business to a particular carrier, citing Defense Depot Red River, Texas (DDRT), as an example. First, DDRT is under the command and control of the Defense Logistics Agency; therefore, Army regulations do not apply; and, second, there are *no* DOD regulations prohibiting guaranteed traffic. In fact, DDRT *does* guarantee transportation business to specific carriers for particular destinations (for example, Fort Hood, Texas).

Multiyear contracts between the depot and a carrier foster a close and long-term relationship. This is a win-win situation for both the depot and the carrier resulting in effective and efficient support to the customer.

Before this partnership and during a period when the transportation industry was closely regulated, the depot transportation officer was required to equitably distribute business among all interested carriers to ensure that no carrier received preferential treatment or more business than other interested and eligible carriers. However, in the current deregulated environment, the rules are different. Under the concept of guaranteed traffic, MTMC announces a solicitation for transportation services to a specific destination, at which time all interested carriers submit a bid to provide the services. Once the bids are reviewed by MTMC and a carrier is selected (that is, a contract awarded), the carrier maintains exclusive rights to all shipments to that destination as long as it performs in accord with the contract specifications.

In summary, this is not "restraint of trade" but a sound business practice in an environment where the rules of engagement are simply no longer the same. And, I might add, for the better of all concerned.

Thomas A. Reichert is course director of the Defense Distribution Management Course, Army Logistics Management College, Fort Lee, Virginia. He also served on the transportation staff at the distribution depot in New Cumberland, Pennsylvania. He is a graduate of Wright State University, Dayton, Ohio, and holds a master's degree from Xavier University, Cincinnati, Ohio.

FC-93 Refit: Maintaining Retrograde Equipment

by Major Isaac D. Waugh, Jr.

An Army Reserve maintenance battalion received first-class training while repairing equipment returned from an exercise in Central America.

Realistic maintenance training is a rare commodity for Army Reserve maintenance units. A maintenance support unit seldom has an opportunity for sustainment training beyond its 2-week period of annual training. Soldiers, including officers and non-commissioned officers (NCO's), are normally just beginning to be effective and feel comfortable in their jobs when their annual training is completed. During 1993, this was not the case for the 519th Maintenance Battalion of Dallas, Texas. Its headquarters company and two light equipment maintenance companies were tasked to plan an innovative supply and maintenance operation for the repair and return of equipment used in the Joint Armed Forces Task Force mission "Fuertes Caminos (Strong Roads) '93" (FC-93).

FC-93 was a humanitarian assistance mission to the Central American nations of Belize and Guatemala. It used American engineering and medical resources to improve the lives of the people in rural areas. The task force's engineering projects included building and repairing schools and roads, drilling water wells for domestic use, and improving landfills. Its health care projects included medical, dental, and veterinary assistance in both countries.

As the exercise began to wind down in the late spring of 1993, the redeployment mission began in earnest. Hundreds of pieces of rolling stock and other equipment began to arrive at Equipment Concentration Site 64 (ECS-64) in Waco, Texas. The mission of the 519th Maintenance Battalion was to receive, service, and repair all of the equipment to technical manual -10 and -20 standards and inventory all sets, kits, and outfits and other miscellaneous equipment used during FC-93. Thus the project was called "FC-93 (Refit)."

This project was indeed unique. Army reservists planned, organized, and executed the 120-day maintenance sustainment mission with the assistance and support of the full-time civilian employees working out of the ECS in Waco. Ordinarily, an active component unit or a civilian area maintenance support activity (AMSA) would have conducted a mission of this magnitude. The 519th established maintenance and supply operations to repair and refurbish equipment redeployed from FC-93. The battalion organized and managed the entire process, determined requirements, secured resources, and supervised and assigned personnel.

Planning for FC-93 Refit

The battalion was notified of its FC-93 Refit mission by the 90th Army Reserve Command in November 1992. The battalion staff and representatives from both light equipment maintenance companies worked feverishly in an effort that continued through the Thanksgiving holiday to develop a comprehensive plan of action. Over the following 4 months, planning conferences were held to work through this draft plan and address each of the issues that were identified. The eventual success of the mission can be attributed in large measure to these meetings, which sorted through all of the details of this complex effort.

At the onset, we estimated that over 82,000 man-hours of labor and nearly a half-million dollars' worth of repair parts would be needed to accomplish the mission. Early in the planning process, we determined that the most effective way to manage this work load was to establish a "core team" that would remain in key positions in Waco throughout the operation. This team would provide continuity and facilitate effective command and control. The core team included a shop operations officer, an administrative NCO-in-charge (a first sergeant), and a property control officer. These critical positions were staffed with the same individ-

Equipment from FC-93 awaits inspection and repair at the equipment concentration site in Waco.

uals during the entire mission.

A mission officer-in-charge was designated for each 2-week rotation. He was responsible for managing resources and for the overall progress of the mission during that period. This position was generally assigned to one of the battalion's junior officers, which provided them with an excellent vehicle for developing their leadership skills. The junior NCO's were also placed in leadership positions, where they gained valuable experience in leading troops and running a maintenance and supply operation.

Soldiers and Civilians Working Together

More than 400 major end items and 1,100 small equipment items passed through the ECS-64 shop during the course of the mission. The battalion established a shop operation within the ECS and set up the Army standard computer process for tracking work-order status. Daily reports were produced and distributed that identified the hours expended, jobs completed, and other information. In addition, we closely monitored the status of repair parts requisitions and their costs.

The soldiers and civilians performed such supply actions as ordering, receiving, issuing, and storing parts; maintenance on engineer, power-generation, electronics, wheeled vehicle, air conditioning and refrigeration, and special-purpose equipment; and administrative support tasks. Schedule "A" services were also performed on all equipment before its departure from the ECS.

Technical inspections were required on all equipment. These inspections occupied as many as 10 Army civilian inspectors working 8 to 10 hours a day. Some individual pieces of equipment took over 7 hours to inspect. Parts were ordered following inspections. Mechanics from the 519th, under the guidance of full-time civilian maintenance personnel, then labored to service and repair the equipment, which ranged from road graders, bulldozers, and 20-ton forklifts to generators and light utility trucks. Communications equipment was also inspected, tested, recalibrated, and repaired. When maintenance was completed, all of the equipment received a final inspection by the ECS civilians to ensure that each item met the standards for return to owning units.

Equipment arrived at ECS-64 in various conditions. Several pieces were destroyed by an intense fire in Belize. Some items had been cannibalized for incountry repair, while others required only routine maintenance. This variety of maintenance tasks provided an opportunity for maintenance personnel to perform more indepth repairs than normal and challenged them to fix items with unusual problems.

Approximately 200 soldiers, representing some 34 military occupational specialties (MOS's), and 20

AMSA civilian employees rotated through Operation FC-93 Refit between 1 June and 30 September 1993. The soldiers worked an average of 10 hours a day, 7 days a week. Army reservists were teamed with full-time civilians from one of the maintenance shops to work on equipment based on the priority and tasking from the shop office. This was an excellent process and provided outstanding training for the soldiers. During each rotation, different officers and NCO's worked in the shop office learning the maintenance management process and the computer system. This was extremely beneficial and provided a real "hands-on" approach and an opportunity to learn maintenance shop operations. The refit mission furnished the realism that training can never really duplicate.

Reserve personnel were rotated into a variety of duty assignments during the operation. This exposed them to all facets of a maintenance operation and allowed cross-training of skills. Some soldiers worked in a rescheduled status in training, some performed annual training, and others performed additional duty for special work tours. A full-time job—FC-93 Refit—was thus completed by a battalion of soldiers working in a reserve status. Their billeting and meals were contracted through a local hotel chain in Waco, and they were shuttled to and from the work site.

Reservists inventory and inspect communications equipment (left) and repair other equipment (above) returned from Central America.

The Benefits

The morale of the troops remained extremely high throughout the mission. The soldiers felt very positive about doing something important that was also, either directly or indirectly, related to their MOS. The hours were long and there was little time off, but the troops were highly motivated and genuinely happy to be there.

The conduct of FC-93 Refit offered considerable advantages—

- Reservists received MOS sustainment training that focused on maintenance and technical supply.
- Because of shortages in job-critical MOS's, soldiers received considerable cross-training. "Heavy" maintenance, for example, was performed only when "light" maintenance mechanics were on site.
- Maintenance shop operations were sustained 10 hours per day, 7 days per week.
- Technical supply procedures were conducted efficiently, as an average of 75 requisitions were processed daily.
- Reserve assets were augmented with full-time ECS resources to accomplish the mission.

So many benefits resulted from this outstanding mission. A vital job was accomplished, saving the Government money, but there was also realistic training for our officers and NCO's and outstanding maintenance and supply training for the reservists who participated. The battalion staff grew as a team and developed confidence. They learned first hand about all the details that are involved in a mission of this type. The planning process provided a great opportunity for the commanders and staff to develop their skills. Officers and NCO's received leadership training that would not have been possible in many annual training environments. This is important in the maintenance arena, where different sets of skills are required for leaders. This experience will better prepare the battalion for mobilization.

As an outgrowth of the FC-93 Refit mission, the 519th Maintenance Battalion developed an ongoing training plan for fiscal year 1994 to sustain the training received in 1993. This plan involves logistics support training. Units from the 519th will perform maintenance on equipment at the ECS in Waco on certain weekends throughout the year. The unique mission of FC-93 Refit thus provides the battalion with a model for achieving meaningful, hands-on training for Reserve maintenance personnel in the future. ALOG

Major Isaac D. Waugh, Jr., is acting commander of the 519th Maintenance Battalion in Dallas, Texas. He is a graduate of the University of Kentucky, at Lexington, and has 5 years of active service and 25 years of National Guard and Reserve service. He is employed by GTE Telephone Operations.

III Corps Warfighter: A Logisti

A G4 staff member describes how III Corps logisticians supported training program's opposing force.

In early December 1993, a significant event, short of war, took place at Fort Hood, Texas. This event, occurring only once every 2 years, was the III Corps Warfighter exercise; and its impact was profound.

The goal of Warfighter is to train and prepare soldiers to handle their wartime missions through participation in a simulated, computer-monitored wartime exercise. III Corps headquarters and its major subordinate commands were the key players. The commander and staff of Third U.S. Army monitored III Corps' performance in the exercise, while the staff of the battle command training program (BCTP) from Fort Leavenworth, Kansas, evaluated corps readiness.

More than 8,000 soldiers were involved in executing the III Corps Warfighter. Most of III Corps' units participated; the major players were the corps command group and staff, 1st Infantry Division (Mechanized), 2d Armored Division, 1st Cavalry Division, III Corps Artillery, 6th Cavalry Brigade, 3d Armored Cavalry Regiment, 13th Corps Support Command (COSCOM), corps separate brigades, and Third U.S. Army. Numerous National Guard and Reserve personnel also took part. If III Corps had actually deployed the forces being replicated in the Warfighter, 157,000 soldiers would have been under the command of Phantom Corps.

Life Support

In September 1993, the III Corps Assistant Chiefs of Staff, G3 and G4, had to develop the logistics infrastructure needed to support the 8,000 soldiers involved in the Warfighter (1,600 of whom would work at Fort Hood's Simulation Center [Simcenter]). The G4 staff received the task of developing a real-world life support concept. This mission evolved into supporting the Warfighter from both field and garrison locations. The exercise support plan called for using self-supporting field command posts, supporting Simcenter personnel from garrison facilities, and making maximum use of host-unit affiliations (for example, the 1st Cavalry Division, based at Fort Hood, provided combat service support [CSS] for the 1st Infantry Division coming from Fort Riley, Kansas).

All major subordinate commands were authorized to coordinate with Fort Hood's troop issue subsistence activity for ration support. Units drew, prepared, and served their own rations at their field sites. Units in garrison ate at a contractor-operated dining facility. The meal schedule accommodated a 24-hour Simcenter operation. Offpost units working in the Simcenter stayed in billets at both Fort Hood's Main Post and North Fort Hood. Fort Hood's Directorate of Logistics (DOL) provided effective bus service between billets located at North Fort Hood and the Simcenter. Because of the type of equipment required (both tracked and wheeled vehicles), offpost units inbound to Fort Hood coordinated directly with DOL's Unit Movements Branch. The 13th COSCOM provided convoy clearance for movements to and from field sites. In all, a total of 1,500 vehicles supported this Warfighter.

To coordinate and direct this real-world support effort, the III Corps command group established a temporary administrative operation center consisting of an entire battalion staff. This unique organization was the focal point for coordinating day-to-day exercise support issues, freeing the III Corps' primary staff to focus on executing the Warfighter.

STARTEX Data Package

The G4 and the 13th COSCOM established the initial logistics data package for the start of the exercise (STARTEX); this data package was used to synchronize all III Corps units.

For every Warfighter exercise, the BCTP requires the command, functioning as the exercise director, to develop the initial STARTEX data. The STARTEX data are broken down and fed into the corps-to-brigade system computer used by BCTP to simulate combat between warfighting units and BCTP's world-class opposing force (OPFOR). In developing STARTEX data, logisticians had to factor in the supply and equipment consumption rates for each unit under III Corps' umbrella. The III Corps G4 and the 13th COSCOM developed and sent these data to the Third U.S. Army staff (III Corps' higher headquarters), which forwarded them to BCTP. The STARTEX data package sent to Third U.S. Army included—

- Personnel strengths of units to be supported.
- Resupply consumption rates per day for each class of supply (using the planning factors established

cian's View by Major Mark W. Akin

the corps' Warfighter exercise against the battle command

by Third U.S. Army).

- Type and quantity of ammunition (class V) stored at each ammunition supply point and corps storage area.
- War reserve stocks of major end items (class VII) stored in a 13th COSCOM heavy materiel supply company and at theater level.
- Direct support, general support, and echelons-above-corps stockage objectives for each class of supply.
- 13th COSCOM's task organization down to company level.
- III Corps Artillery's unit basic loads.
- CSS relationships between COSCOM units and divisional and nondivisional units.

STARTEX data collection required coordination among the G4 Plans Section, the 13th COSCOM, and III Corps Artillery. This collaboration was necessary in order to synchronize the type of CSS data used by BCTP to start the Warfighter. Building this type of data package forces logisticians to think through many CSS issues and work the logistics estimate process.

Based on the force allocation established, the logisticians answered such questions as: Does the 13th COSCOM have enough units to support, transport, and lift the quantities of supply required? What should be the makeup of each corps support group (forward) in the COSCOM? Are the planning factors for each class of supply right for the environment in which III Corps has to fight? How should the class VII war reserve stocks be broken out and stored? What is the proper mix of class V at the ammunition supply points? The questions seemed endless as the data package was developed, but the results provided all III Corps logisticians with a common starting point. This same process provided critical input when G4 and COSCOM planners began helping to select an operations plan for the exercise.

Development of the Corps Operation Order

Within III Corps, the Assistant Chief of Staff, G3, oversees a unique element called the corps forward planning team (CFPT). Its purpose is to quickly develop different courses of action based on the command estimate process and the commander's intent. The CFPT consists of staff planners from each battlefield operating system and representatives from such major subordinate commands as the 13th COSCOM, III Corps Artillery, and the 31st Air Defense Brigade. During course-of-action wargaming, the CFPT divides into two "tiers." Tier 1 consists of selected corps G2 planners, G3 war planners, a G4 planner, and a corps artillery fire support element planner. Tier 2 consists of the tier 1 personnel, plus all other battlefield operating system personnel and major subordinate command representatives.

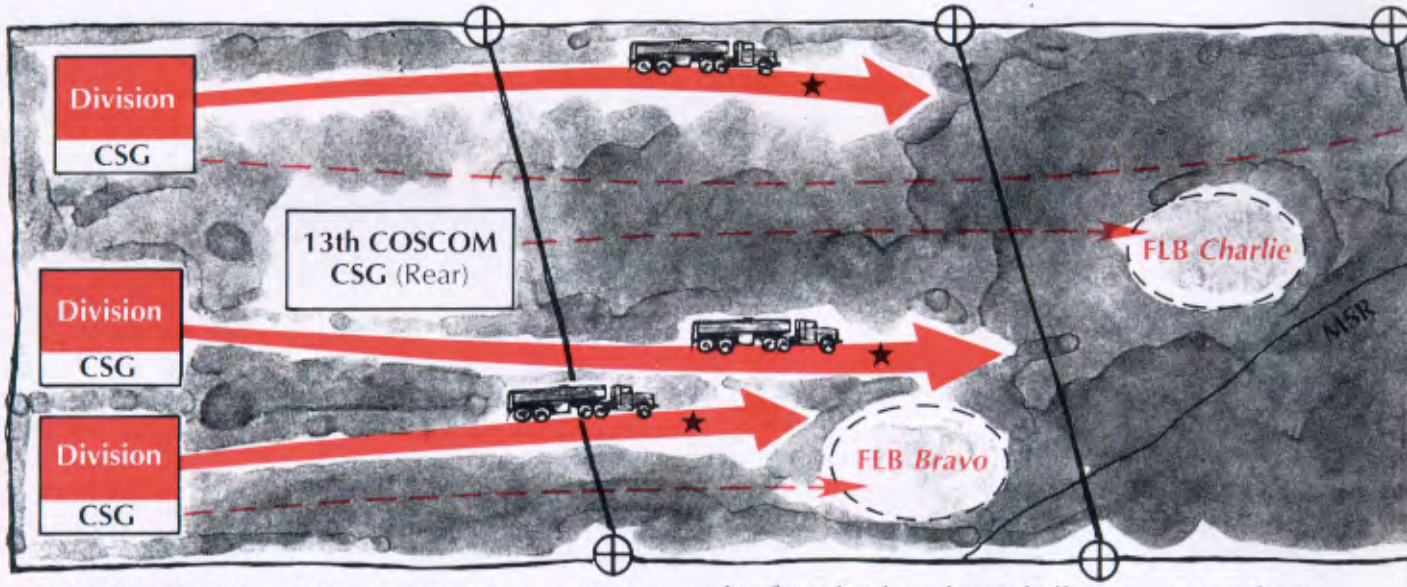
At the tier 1 meetings, the G4 planner, in coordination with the G2 and G3 planners, walks through each course of action and provides projections of loss rates for the major subordinate commands' primary weapon systems. This process is speeded by a doctrinally-based weapon system attrition-rate book developed by the G4 Plans Section. This book lists the loss rates for each primary weapon system, under specific types of combat operations (defense, offense, delay), for each major subordinate command. Tier 1 may wargame several courses of action. Once these courses of action are narrowed down, tier 2 personnel convene with Tier 1 war planners to rank the courses of action and informally pick three or four for presentation to the corps commander.

The III Corps Warfighter plan depicted one division breaching the OPFOR's first-echelon defensive belt on the corps' western sector, followed by an attack by an armored division and a supporting division. The armored cavalry regiment protected III Corps' eastern sector and flank. This massive armored punch presented III Corps' logisticians with several challenges, in particular the need to position CSS for divisions that can quickly outrun their support in an otherwise austere environment with few resources. This need led to the development and enactment of many innovative support concepts.

Support Concepts

Early in the planning process, III Corps allocated key terrain to the 13th COSCOM so it could establish forward logistics bases (FLB's) and many pre-positioned points. This action directly impacted the future support concepts used by III Corps in the Warfighter.

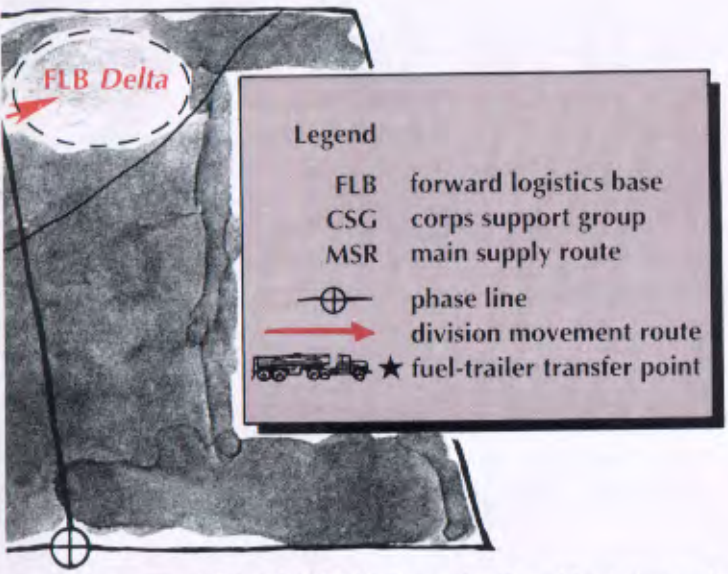
After arriving in the theater and moving into the



The layout of the CSS infrastructure to support III Corps' major subordinate commands, showing location of forward logistics bases (FLB's), fuel trailer transfer points, and corps support groups.

corps' forward assembly areas, III Corps chose to posture the 13th COSCOM and the majority of its supplies forward of III Corps' divisions. These support sites were protected by the corps' covering force and were well out of enemy artillery range. This positioning was dictated by the extreme distance covered by the corps' area of operation (140 by 550 kilometers); keeping the COSCOM behind the divisions would have made support extremely difficult. Coupled with this plan was the doctrinal assignment of using one forward corps support group (CSG) to support each division. These two actions allowed III Corps logisticians to perform many missions, including the following—

- With its CSG (Rear) forward of the divisions, the 13th COSCOM could position fuel-trailer transfer points and convoy support centers along each divisional movement corridor. This allowed the forward CSG's supporting each division to keep their stocks uploaded; they did not have to expend their fuel supporting divisional movements. The corps commander's refueling concept called for using fuel-trailer transfer points and refuel-on-the-move procedures to supply divisional assets behind the division-corps line. Fuel support to the divisions forward of that line was accomplished by using 5,000-gallon trailer transfer operations supported by each division's CSG.
- By accepting risk, the forward positioning of the 13th COSCOM allowed the early establishment of many class III, IV (construction materials), and V sites during phase I of the corps plan (movement and the covering force battle). These sites supported the covering force battle and were built up to support the major subordinate commands when III Corps went on the offensive.
- The 13th COSCOM established three critical FLB's near the division-corps line along a major highway route. The early establishment of FLB's Bravo and Charlie allowed the COSCOM to quickly emplace class III, V, and VII stocks for initial corps consumption and replacement of losses. The forward positioning of the FLB's along a major highway route allowed theater army area command (TAACOM) units to throughput supplies as far forward as possible, which helped to free COSCOM supply and transportation assets to perform other CSS missions.
- Within the 13th COSCOM, two heavy materiel supply companies maintained the corps' theater class VII war reserves stored in ready-to-fight condition. The war reserves were split between these two units to reduce the likelihood of their destruction by artillery strikes. Both units were located forward near major supply routes and focused on supporting the corps' main effort.
- Control of replacement detachments located near the heavy materiel supply companies allowed the placement of crews with primary weapon systems. This facilitated limited weapon-system-replacement operations forward early in the operation, giving the corps commander a combat multiplier.
- To provide direct support to III Corps Artillery brigades, the 13th COSCOM used organic assets to develop forward logistics elements (FLE's) tailored to the factors of METT-T (mission, enemy, terrain, troops, and time available). Each FLE contained a class III platoon, a class V section, and different types of maintenance augmentation teams. Each FLE stayed with its respective field artillery brigade throughout all phases of the operation.



• The 13th COSCOM formed tailored logistics task forces (LTF's) Viper and Mamba to support the 6th Cavalry Brigade and 3d Armored Cavalry Regiment, respectively. As an example of their organization, LTF Mamba, in supporting the 3d Armored Cavalry Regiment, was controlled by a supply and service battalion headquarters and organized with a general supply platoon; medium truck company; petroleum, oils, and lubricants platoon; aviation intermediate maintenance platoon; quartermaster water detachment; ammunition transport platoon; and maintenance company.

Before STARTEX, the III Corps logistics community conducted a "logistics rock drill" for the corps' deputy commander. This event tied together all the CSS concepts and operations from a corps' perspective down to a division support command's (DISCOM's). CSS synchronization was the main theme. During the drill, the III Corps G4 briefed the overall corps concept of support on a 60- by 40-foot terrain board. The positions of all of the corps' major subordinate commands at STARTEX were laid out on the terrain board using unit placecards. The 13th COSCOM commander and each DISCOM commander briefed his concept of support. The logistics rock drill's success would be measured by how well III Corps performed its mission.

After-Action Review Comments

III Corps received extremely positive remarks on its overall execution of combat service support. After-action comments came more as in-house observations than from "outside" organizations. Key CSS after-action comments noted the following III Corps actions as ones that should be *sustained*—

• The III Corps main command post should retain CSS planning capability. The G4 had split his staff to cover the corps' tactical, main, and rear command posts.

• The close working relationship between the G4 and the 13th COSCOM should be continued. Both organizations were physically located close together in the corps rear, which facilitated the quick flow of CSS issues and concerns between them.

• The proficiency of major subordinate commands in using the maneuver control system for transferring information must be maintained. The G4 staff transmitted files in both Word Perfect and Harvard Graphics software systems between G4 command post sites and the major subordinate commands.

• The deputy corps commander established the priority of issue for class VII war reserves and designated the G4 rear as the release authority. This one action saved a significant amount of time in the material release decision process.

• The corps G4 and the 13th COSCOM received a complete logistics report from all major subordinate commands the night before STARTEX. This allowed the CSS community to synchronize CSS data and planning before the exercise began.

Among observations in areas where III Corps should *improve* were these—

• III Corps should keep CSS STARTEX data from changing after a Warfighter commences. The corps G4 and the 13th COSCOM must improve CSS STARTEX data tracking by using one center as the official keeper of CSS STARTEX information.

• The III Corps G4 staff is an agency that has high personnel turnover. Exercises such as a corps Warfighter should be used to synchronize and teach staff personnel their responsibilities. Within the III Corps G4 staff, this was accomplished by conducting two G4 staff miniexercises and participating in a corps-level command post exercise before the Warfighter STARTEX.

Perhaps most significantly, the G4 staff learned how tough it is to pull off a 24-hour operation at three separate sites with key players requesting up-to-date, accurate CSS data. This task can be daunting if CSS staffs and commands have not thoroughly planned and practiced their roles and responsibilities. The experience of Phantom Corps can help focus other logisticians on their own Warfighters in the future. **ALOG**

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IPOLDS: A System for Deter

by Ellen M. Purdy

In examining its performance after Operations Just Cause, Desert Shield, and Desert Storm, the Army identified a number of "lessons learned" that concerned the logistics requirements for operating, maintaining, and sustaining Army aviation and ground materiel. Lieutenant General (now General) Gary E. Luck, who was then commanding general of the XVIII Airborne Corps, pointed to one of these lessons in a 17 June 1992 memorandum when he wrote, "During Just Cause and Desert Shield/Desert Storm, lack of Class III Packaged Products threatened our ability to execute/support combat operations."

Class III packaged products include all of the lubricants, oils, and petroleum-based consumable products needed to maintain and operate equipment. Units that deployed to Southwest Asia were often required to mobilize with incomplete basic loads or with basic loads that included the wrong items, which resulted in equipment performance problems that affected combat effectiveness in many ways. According to General Luck, "Class III Packaged Products during Operations Just Cause and Desert Shield/Storm was almost a war stopper due to inadequate basic loads."

The petroleum, oils, and lubricants (POL) problems that occurred in the Persian Gulf War were documented in a 1992 Belvoir Research, Development, and Engineering Center technical report, *Performance of Fuels, Lubricants, and Associated Products Used During Operation Desert Shield/Storm.* One of the problems was a shortage of MIL-L-2104 tactical engine oil; this shortage was aggravated by a requirement to change oil more frequently because U.S. equipment was using high-sulfur-content Saudi Arabian diesel fuel. Unavailability of MIL-H-46170 and MIL-H-6083 hydraulic fluids required the temporary substitution of Dexron II transmission oil and MIL-L-2104, which resulted in a loss of equipment performance. Lack of MIL-A-46153 antifreeze required the Army to use commercial products, which led to cooling system corrosion problems in M2 and M3 Bradley fighting vehicles and other equipment.

Problems other than those identified in recent operations affect logistics management of POL packaged products. One problem is the extensive use of nonmilitary, proprietary products. These are products that can be acquired from only one source, which makes them more expensive. In many cases, the Army acquires more proprietary products than it needs, which results in stocks of redundant products. Another problem is significant use of outdated products when higher performance products that meet military specifications are available. Army units also use different products for identical applications when a single product could be used. All of these problems demonstrate the need to develop a logistics system that will avoid such difficulties in future operations.

One possible solution is the development of the integrated petroleum, oils, and lubricants data system (IPOLDS). This proposed system is a comprehensive data base that will identify the correct POL products needed to operate, maintain, and sustain all Army aviation and ground equipment, from the M1A1 Abrams tank; to the AH-64 Apache attack helicopter; to 60-kilowatt, diesel-engine-driven, mobile power generators. The POL products identified by IPOLDS for each item of equipment will represent the optimum POL basic-load components. IPOLDS will be able to tailor these POL requirements to geographical conditions and the type of mission to be performed.

To account for possible shortages of recommended products within the supply system, IPOLDS will identify equivalent alternative products. Compatibility data for products to be provided under host-nation support agreements will also be available. Equivalent products that do not contain hazardous or Enviromental Protection Agency-restricted components will be identified to help units meet use and disposal regulations. All of this information will allow Army units to deploy with only those POL products they need.

Currently, when units identify their basic-load requirements for POL products, they must review individual technical manuals and lubrication orders for their equipment. These documents are available to units in hard copy, so reviewing each technical manual and lubrication order for every item of equipment deployed by the unit becomes a time-consuming task. Because the review and revision process for updating technical manuals and lubrication orders is lengthy, the documents in the hands of users do not always reflect the most accurate and up-to-date information.

mining POL Requirements

IPOLDS will change this because, as an automated system, it can be quickly updated and easily maintained for accuracy.

IPOLDS will benefit the Army in areas other than determining basic loads. It can serve as a tool for streamlining the logistics tail for military equipment. For example, the UH-60 Blackhawk helicopter currently requires 29 different POL products, some of which are proprietary, for maintenance and operation. IPOLDS can identify which proprietary products have acceptable military-specification equivalents, and which products can be replaced by new, multifunctional standardized products emerging from research and development efforts. All five of the proprietary products required for the Blackhawk can be replaced by currently available military-specification equivalents, and the total number of products required by the helicopter can be reduced to 20 (a 31-percent reduction).

The number of POL products required can be further reduced by taking advantage of products now being developed that have multifunctional characteristics. For example, by using a single hydraulic fluid and a multipurpose aviation grease, the Blackhawk can be operated and maintained with only 16 products, which will represent a 45-percent reduction in POL basic-load requirements. This significant reduction in its logistics tail obviously will be a combat multiplier for the helicopter.

One of the advantages for the Army in avoiding the use of proprietary, nonstandard products is the reduced cost of using products available from multiple sources. Proprietary products are sold by only one manufacturer, and their cost is often significantly higher than the equivalent military-specification product. DC4 silicone grease, when purchased under the national stock number assigned to that particular product, has a unit price of $5.60 per 2-ounce tube (in fiscal year 1992 dollars). DC4 silicone is also a qualified product under MIL-S-8660 silicone compound; when the military-specification product is purchased, the unit price is only $1.84 for a 2-ounce tube. Because DC4 is purchased as a proprietary product, the Army is forced to pay a 300-percent markup on a product that it can also obtain through a military specification subject to manufacturer competition.

In fiscal year 1992, the Army spent $6.4 million to buy proprietary products under Federal supply classes 6850 and 9150. If 65 percent of those products had a military-specification equivalent, which typically averages 50 percent less in cost-per-product, the Army could potentially have saved $2.1 million in annual procurement costs. IPOLDS will provide an automated means to find these military-specification-equivalent products.

In addition to procurement cost savings, IPOLDS will yield other benefits in terms of reduced operation and support costs, improved operational readiness, enhanced mobilization capability, and extended battlefield sustainability. Some projected benefits include—

- Reduced vehicle and equipment maintenance costs through the use of improved POL products.
- Fewer POL-related vehicle and equipment problems resulting from using the wrong product.
- Reduced risks in using host-nation and commercial POL support.
- Decreased time required to mobilize and deploy because basic-load requirements and needs can be quickly updated.
- Decreased hazardous waste disposal costs resulting from identification and use of POL products that comply with environmental standards.

IPOLDS will fully support the Army Training and Doctrine Command's logistics requirements identified by the Combat Service Support Battle Lab. Clearly, IPOLDS represents a concept whose time has come.

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ALOG DIGEST

TASK FORCE STUDIES DOD READINESS

The readiness of U.S. forces is acceptable in most measurable areas; but there are "pockets" of unreadiness that, if not addressed, could result in the return of "hollow" forces. That is the basic conclusion of the Defense Science Board's Task Force on Readiness, which issued its final report in July.

The task force was established by the Secretary of Defense in May 1993 to independently assess key indicators for measuring readiness; candidate methodologies for providing early warning of potential problems; and other matters affecting individual and collective readiness. It was chaired by retired Army General (and former Chief of Staff) Edward C. Meyer and included seven other retired general and flag officers from all the services.

The task force concluded that systems in the Department of Defense (DOD) for measuring and reporting readiness are strongest for evaluating the current readiness of units but significantly weaker for predicting future unit readiness and joint force readiness.

To maintain and improve readiness, the panel made over 70 specific recommendations in the areas of personnel; funding operational tempo; sustainment; joint and combined training and doctrine; joint command, control, communications, computer, and intelligence (C4I) and space; modeling and simulation; reserve components; mobility; weapons of mass destruction; infrastructure and facilities; medical care; organizing for readiness; and future readiness.

In its chief recommendations, the task force urged that DOD—

- Provide sufficient resources to obtain, train, educate, and retain high-quality personnel.
- Work with the Congress to develop a system for funding contingency operations that does not hurt the readiness funding of forces not engaged in such operations.
- Develop measurement systems that better portray the readiness implications of policy and budget decisions.
- Develop and implement practices and procedures that address sustainment readiness at the same level of detail and with the same emphasis used to address combat readiness.
- Emphasize joint and combined readiness and requirements, including development of joint mission-essential task lists.
- Develop and implement, with the involvement of the theater commanders in chief (CINC's), a joint C4I architecture and doctrine.
- Increase the use of modeling and simulation technology to enhance joint and combined training and doctrine.
- Emphasize both offensive and defensive readiness for nuclear, biological, and chemical operations.
- Continue to refine the roles of the Secretary of Defense, Chairman of the Joint Chiefs of Staff, the armed services, and the CINC's in readiness matters, particularly in allocating resources to support joint readiness and planning for readiness to conduct joint operations.
- Ensure that the 1995 round of base closings and realignments has guidance that emphasizes ultimate basing and elimination of infrastructure.
- Implement Defense Science Board proposals on acquisition, depot maintenance, defense manufacturing, and training that affect readiness.

DOD has begun implementing many of the task force recommendations, including—

- Making readiness DOD's top priority.
- Appointing the Vice Chairman of the Joint Chiefs of Staff as a focal point for readiness issues and designating the Joint Staff's J7 directorate as the lead for joint training.
- Planning a major wargame for this fall to evaluate the adequacy of the forces planned under the bottom-up review.
- Initiating the joint warfighting capability assessment process, which will evaluate military capabilities by mission area, not service, over a 20-year-plus timeframe, identify problems, and make budget adjustments.

The task force will continue to meet quarterly or when called to review the status of its recommendations and study other readiness issues.

MORE WOMEN TO BE LOGISTICIANS

The Secretary of Defense approved the Secretary of the Army's recommendation to open additional positions to women, effective 1 October 1994. The Army is opening three military occupational specialties (MOS's) and over 32,699 positions in more than 16 units. As a result, 91 percent of the career fields and 67 percent of the Total Army's positions are now open to women.

The approved positions include assignments to the forward support teams of forward support battalions. Women are also eligible for assignment to division military police companies, chemical reconnaissance and smoke platoons (chemical companies), smoke platoons (mechanized smoke companies), engineer bridge com-

and smoke platoons (chemical companies), smoke platoons (mechanized smoke companies), engineer bridge companies, military intelligence collection and jamming companies, a military police company (minus) attached to the 3d Infantry (Old Guard) Regiment, regimental aviation squadron of the armored cavalry regiment, and the air cavalry troops of the divisional cavalry squadron.

Assignments can be made to open MOS's and areas of concentration in the following headquarters: maneuver brigade, armored cavalry regiment, 160th aviation group, special forces group, division air defense artillery battalion, and combat engineer battalion.

The following units and skills cannot be opened to women because they involve direct ground combat or some of the duties fall under another exclusion provision: infantry battalions, armor battalions, field artillery battalions, special forces battalions, ranger regiment, ground cavalry squadrons, forward air defense artillery batteries, combat engineer companies, and ground surveillance radar platoons (military intelligence).

AR 600-13, Assignment of Women, will be rewritten to reflect the new policy and redefine "direct ground combat."

INSTALLATION MANAGEMENT GUIDES ISSUED

The Army Assistant Chief of Staff for Installation Management authorized distribution of the premier version of the Army installation management action plan (IMAP) to all installations earlier this year. The IMAP will guide Army installation managers in implementing the eight goals of the installation management strategy published in *Installations: A Strategy for the 21st Century.* The eight goals are—

- Reshape installations to meet power-projection specifications.
- Formulate soldier and civilian employee programs to enhance the quality of life and improve the living and working environment for soldiers, families, and civilians.
- Achieve total integration of environmental stewardship into installation operations.
- Establish and resource an "investment plan" for our enduring installations to revitalize or replace installation infrastructure facilities.
- Complete installation-level business process and functional redesign to offset the impact of downsizing and continuing resource constraints, improve service, and reduce costs of running installations; incorporate modernized telecommunications network to support voice, data, and image services.
- Achieve community, interservice, and interagency partnerships for facilities and services to improve operations, customer service, and fiscal effectiveness and efficiency.
- Attain resource management flexibility for the garrison commander through policy, procedures, and systems changes that will enable installations to operate as business activities and maximize the effectiveness and efficiency of resources.
- Transform the Army's human resource programs to build a participative, committed, installation management team capable of meeting the uncertainties and technological complexities of a constantly changing environment.

The Army is placing increased emphasis on improving operations on installations to better support the force-projection Army. Endorsing the strategy that was released in 1993, Army Chief of Staff, General Gordon R. Sullivan, and former Secretary of the Army, Michael P. W. Stone, said:

> . . . we must critically analyze which services we should continue to provide, which ones we should divest, which ones should be contracted or consolidated, and how to better afford and support those we retain. . . We must seize the initiative to operate our installations in a smart, business-like manner in order to provide our soldiers and their families, civilians, and contractors the best possible living, working, and training environment.

In addition to development of the IMAP and strategy, the Army Chief of Staff has approved the release of part I, infrastructure, of the installation status report, to be used by installation commanders in resource allocation and infrastructure decisions. The Army Logistics Management College (ALMC), Fort Lee, Virginia, recently published FM 100-22, Installation Management, to guide installation and garrison commanders in their management responsibilities. ALMC is offering several installation management courses to train commanders in providing services, managing resources, and improving efficiency.

USTRANSCOM TRACKS MISSILE SHIPMENT

The Department of Defense successfully tested an enhanced capability for tracking critical shipments when it recently tracked the movement of Patriot missiles shipped from Texas to Korea. The U.S. Transportation Command (USTRANSCOM), Scott Air Force Base, Illinois, is testing variations of automated information technology to identify and monitor the movement of Defense cargo from the point of origin to destination.

The Patriot deployment offered an opportunity for USTRANSCOM to expand existing tracking capabilities and test new technology.

Beacon transceivers and satellite tracking were used to monitor the movement of the missiles. Transceivers are transmitters activated to relay a predetermined signal to a satellite for cargo tracking. Satellite tracking devices were placed on the trains and ships that were used to transport the missiles. The technology allowed transportation officials to determine the times of departure, monitor the exact locations of all shipments, and ensure that shipments were complete and arrived on time. Lieutenant General Kenneth R. Wykle, Deputy Commander in Chief, USTRANSCOM, said, "Tracking transportation movements using satellites shows real merit in DOD's ability to monitor assets and provide almost instantaneous shipment location visibility."

HMMWV CARRIES SATELLITE SYSTEM

Engineers at Tobyhanna Army Depot, Pennsylvania, have designed a new carrier for the AN/TSC-93B, a multichannel tactical satellite communications system, that will permit units to rapidly deploy the system in the field. The carrier is a heavy high-mobility, multipurpose, wheeled vehicle (HMMWV) equipped with a specially designed frame that can support the weight of the AN/TSC-93B without overloading the vehicle.

The 82d Signal Battalion, 82d Airborne Division, Fort Bragg, North Carolina, requested that Tobyhanna develop a HMMWV carrier. The unit wanted to preserve its ability to rapidly deploy with the AN/TSC-93B after the Army decided to designate the HMMWV as its primary light equipment carrier in place of the commercial utility cargo vehicle (CUCV). Tobyhanna personnel had developed a version of the CUCV to serve as a satellite system carrier following the 1989 Operation Just Cause in Panama. Placing the AN/TSC-93B on CUCV's gave the satellite system a roll-on-roll-off capability and increased its air transportability. The AN/TSC-93B mounted on CUCV's made the deepest penetration into Iraq of any Army multichannel tactical satellite system during Operation Desert Storm.

In designing the HMMWV carrier, Tobyhanna engineers made extensive use of a computer-aided engineering system to reduce the frame's weight while maintaining its ability to carry the satellite system's load. The prototype carrier is now being used by the battalion, and several other units are looking at using the frame on heavy HMMWV's for other purposes.

A HMMWV equipped to carry the AN/TSC-93B tactical satellite communications system.

SYSTEM GENERATES VEHICLE PRIORITY LISTS

Two instructors at the Army Logistics Management College, Fort Lee, Virginia, developed an expert systems application that will generate a vehicle priority list for units preparing for deployment. Major Saul A. Grandinetti and Captain Thomas M. Crea developed the prioritized vehicle list (PVL) generator, which establishes vehicle deployment priority order in less than 6 minutes. Units previously needed approximately 6 hours to develop such a list.

The PVL generator employs a data base of information on units and their associated vehicles. The system uses a graphical user interface to provide features such as pull-down menus that enable the user to work primarily with a mouse. It runs on any 386 personal computer equipped with Windows, version 3.1, software.

Once fully developed, the PVL generator will produce vehicle deployment priority lists for all size units and missions. These include airland and airdrop missions at Fort Bragg, North Carolina; railroad operations in Germany; air and ship loading operations at Schofield Barracks, Hawaii; and any convoy operation throughout the world. Vehicle order is based on the unit commander's strategy and the nature of the mission.

Major Grandinetti and Captain Crea will present a paper on the PVL generator at the sixth international conference on artificial intelligence and expert systems applications (EXPERSYS-94), 1 to 2 December, at the J. W. Marriott Hotel, Houston, Texas.

The Army Natick Research, Development, and Engineering Center, Natick, Massachusetts, initially funded the project for use by the 1st Brigade, 82d Airborne Division, Fort Bragg.

LOGISTICS INFORMATION AND TRAINING EXCHANGE SEMINAR HOSTED BY ALMC

The Army Logistics Management College (ALMC) Fort Lee, Virginia, and the Royal Logistic Corps Training Center (RLCTC), Andover, England, held a joint logistics seminar at the Fort Lee campus, 31 May through 2 June. ALMC hosted what is to be the first of a series of logistics information and training exchange seminars between the two schools.

Brigadier Paul Evans, commandant of the RLCTC and Colonel Richard Cadorette, commandant of ALMC, headed their respective groups of senior staff and faculty participants. Emerging doctrinal changes in the armies of both nations, officer leadership and professional development training, and operations other than war were basic subjects explored during this first seminar. British participants provided information on current logistics initiatives and lessons learned from extensive experience in Northern Ireland and other theaters of operation; while U.S. participants provided information on lessons learned from Operations Desert Shield and Desert Storm, Provide Comfort, Restore Hope, and several disaster relief operations.

Demonstrations of training methods for logistics and staff officers were given in order to compare techniques. Staff members of the Army Combined Arms Support Command at Fort Lee demonstrated the combat service support tactical simulation system, the Army's newest training simulation for logistics staffs. Brigadier Evans said his staff will use lessons learned from ALMC's development of the Combined Logistics Officer Advanced Course to develop courses for officers of the United Kingdom's newly formed Royal Logistic Corps (see story in the January-February 1994 issue of *Army Logistician*).

The two commandants, at the conclusion of the seminar, affirmed the three aims of the seminar—to validate a partnership between the schools, to debate issues of concern to both armies, and to determine the need and focus for future seminars—had been met. They announced tentative plans to hold a second seminar this fall.

SPECIALIZED REPAIR ACTIVITIES AUTHORIZED AT INSTALLATIONS

Installations with the capability may request authority to perform depot-level repairs on certain items. General support maintenance activities may be designated "specialized repair activities (SRA's)," which allows them to perform depot-level repair on items coded "D" (the lowest maintenance level capable of complete repair of the support item-depot level) or "L" (repair restricted to designated SRA) in the maintenance allocation chart. The authority is granted by the Army Materiel Command (AMC) to save time and dollars and when there is no adverse impact on depot work loads.

The SRA request instructions are in AR 750-1, Army Materiel Maintenance Policy and Retail Maintenance Operations. Requests should be submitted to AMC major subordinate commands identified by the Army master data file source of supply code, with an information copy to the installation's major Army command headquarters. New procedures effective 10 December 1993 gave approval authority to the major subordinate commands and resulted in a reduced processing time of approximately 45 working days.

For information on SRA points of contact at the subordinate commands or on the new procedures, call Linda Vanderson at AMC's Logistics Support Activity, Redstone Arsenal, Alabama, at DSN 645-9653.

☐ The Secretary of Defense's Superior Management Award for 1994 was presented to the Army Natick Laboratories' Force Provider management team. The annual award is made for programs that show substantial financial gains or savings, reduction of acquisition cost, compression of acquisition time, or improvement of weapons support or readiness. Force Provider, which meets all of these criteria, is the Army's new support system for combat troops. The transportable support system provides hot meals, showers, laundry, climate-controlled tents, and a variety of morale, welfare, and recreational activities. In July 1991, Army Chief of Staff, General Gordon R. Sullivan, challenged the Army Staff to improve the quality of life for soldiers in combat. The Force Provider system was developed in a little over 2 years, a year ahead of schedule and $1.5 million under budget. The management team briefs General Sullivan during a field test of the system (above).

ALOG EMPHASIS

(Continued from page 1)

SURE PROGRAM UPDATED

The Army Combined Arms Support Command (CASCOM), Fort Lee, Virginia, released the first major revision of its supply usage requirements estimator (SURE) computer program since its introduction in August 1993 (see article on pages 32 and 33 of the November-December 1993 issue of *Army Logistician*). SURE, version 1.2, features an updated data base of the most current, approved table of organization and equipment units, equipment densities, and consumption rates. CASCOM also released a new stand-alone companion program, the operations logistics planner (OPLOGPLN), that performs supply estimates in support of operation plans and orders analyses. For more information, call CASCOM at DSN 539-0668 or commercial (804) 765-0668.

VEHICLES USED IN DRUG WAR

The Army is donating excess vehicles to law enforcement agencies to support the President's war on drugs. Since April 1993, the Army Tank-Automotive Command (TACOM), Warren, Michigan, has given 1,629 Army and Marine Corps vehicles valued at $33.8 million to sheriff, police, and Federal agent offices for use in counterdrug operations. Marlene Kelly, TACOM's drug and law enforcement program coordinator, says that many drug enforcement agencies lack funds for equipment. Vehicles, particularly 4-wheel drive trucks, are needed to gain access to drug-related operations and marijuana fields. Downsizing and restructuring of military forces created the excess supply of vehicles.

7TH MEDCOM INACTIVATED

The U.S. military's largest oversea medical command, 7th MEDCOM, Heidelberg, Germany, inactivated on 5 August. 7th MEDCOM's tactical resources will transfer to the 30th Medical Brigade, which will be a separate brigade under V Corps. The Army's community health care system in Europe will fall under the European health and dental services support areas headquartered in Landstuhl, Germany.

DPSC TEAMS UP WITH INDUSTRY

The Defense Personnel Support Center (DPSC), Philadelphia, Pennsylvania, turned to commercial companies for help when a contractor said it could no longer supply the material used to make the pouch for the meal, ready-to-eat (MRE), food ration. No other company produced or supplied the special polypropylene pouch lining that could withstand the rigors of combat, ensure a 3-year shelf life, and survive temperatures from -20 to 220 degrees Fahrenheit. DPSC formed the MRE industry packaging process action team (PAT) that included technicians and specialists from several major industries, Rutgers University, DPSC, and the Army's Quartermaster School and Natick Research, Development, and Engineering Center. In a little over a year, the PAT engineered, tested, and procured a polypropylene film made by EXXON that exceeds the performance of the old material with no difference in cost.

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CONFERENCE POSTPONED

U.S. Army, Europe, headquarters announced postponement of its planned tactical logistics automation conference. The conference, planned for 25 to 27 October, was announced in the Digest column of the September-October issue of *Army Logistician*. A spokesman for the conference says it will not be held before spring of 1995.

FM 100-22 PUBLISHED

FM 100-22, Installation Management, developed by the Army Logistics Management College, Fort Lee, Virginia, was published in October. The manual describes core installation management functions and provides guidance for installation and garrison commanders in accomplishing the expanding mission of the Army's installations. Installations of the 21st century must have the capacity to train, mobilize, deploy, sustain, support, recover, and reconstitute assigned and mobilized operating forces.

PERSONNEL SEMINARS SET

The Soldier Support Center, Fort Benjamin Harrison, Indiana, and the U.S. Total Army Personnel Command will cohost a worldwide, all-ranks, 1994 Personnel Planning Conference 14 to 17 November. The conference will be held at the Radisson Hotel, Indianapolis, Indiana, telephone (800) 333-3333. Seminars will be offered on new and evolving programs and will focus on the Force XXI personnel concept plan. Topics can be proposed by calling DSN 699-4800 or commercial (317) 542-4800. For preregistration, call Sergeant First Class Mickle or Captain Carle at DSN 699-4692/4750 or commercial (317) 542-4692/4750. The conference cost of $50 is payable at time of registration.

Coming in Future Issues—

- Logistics Phoenix: New ULLS S4
- Equivalent Theory of Logistics
- LOGSA: One-Stop Logistics Information Service
- Napoleon: Grandfather of the MRE
- Joint Casualty Evacuation Operations
- Learning Through a CSS Staff Ride
- Case for a Unified Logistics Command
- Your Future as a Multifunctional Logistician
- New 'Eyes' for British Army Logistics
- Wartime Host Nation Support
- MEDEX—Revolution in Oversea Supply
- Intransit Visibility
- Customer's Perspective of Materiel Distribution
- Move Out and Draw Fire
- Logistics Support of Prepo Afloat
- Logistics Command and Control of a Joint Task Force
- Intheater Missile Repair Activity
- Inactivation Made Easy

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