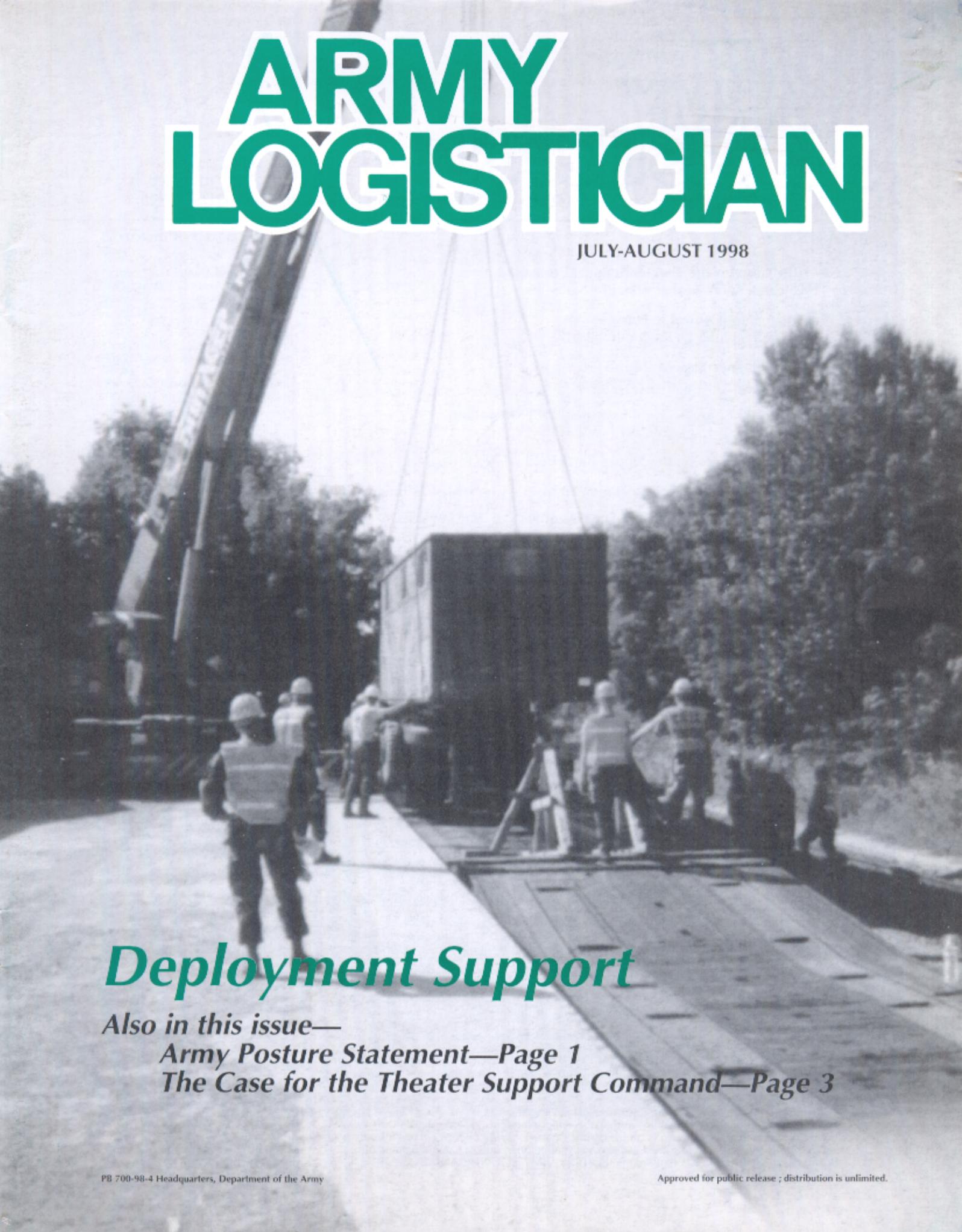


ARMY LOGISTICIAN

JULY-AUGUST 1998



Deployment Support

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ARMY LOGISTICIAN

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Disclaimer: Articles express opinions of authors, not the Department of Defense or any of its agencies, and do not change or supersede official Army publications. The masculine pronoun may refer to either gender.

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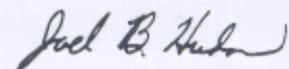
Soldiers of the 503d Maintenance Company supervise the uploading of equipment on railcars at the intermediate staging base in Taszar, Hungary. Providing safety guidance and tools at the railhead is one of many missions performed by Army units to support movement and deployment of troops and equipment. Articles beginning on pages 6, 9, 12, and 36 describe various deployment and movement support missions.

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:

DENNIS J. REIMER
General, United States Army
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Official:



JOEL B. HUDSON
Administrative Assistant
to the Secretary of the Army
04701

Coming in Future Issues—

- Support for Special Operations Forces
- Chemical Warfare Service Prepares for War
- Using Laptop Computers for ULLS-G
- Ammunition Supply in the Korean War
- A Guide for the Ground Assault Convoy
- Integrating Nondivisional CSS Unit Attachments
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- Arming the Force on the 21st Century Battlefield
- Modernization of a Class IX Facility

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AND ADDITIONAL CITIES

Official Business

More on FAA Flight Strips

We at LOGSA read with interest the letters in your January-February 1998 issue discussing the FAA flight strips. What piqued our interest was the reference to Federal Supply Class (FSC) 0052. As the Army cataloging policy folks, we thought this was kind of funny because that is not a legitimate FSC. We figured that it was for internal FAA use. When we called the good folks at FAA, they confirmed our suspicions. They told us that they have assigned a series of national stock numbers (NSN's) for their most common flight strips. The most popular one is for their reference number FAA7230-7.2 and commercial and Government entity (CAGE) code 08125. Researching this NSN in the FEDLOG shows that the FAA is the only current recorded user of that item.

If your readers have a need for this or the other FAA forms, they should requisition them using the DD Form 1348-6 as an off-line requisition. If they have an anticipated need for any NSN's that do not appear in the Army Master Data File (AMDF) portion of the FEDLOG, they should complete a DA Form 1988 (Request for Review of an Item), in accordance with DA Pam 708-1, for proper recording of the Army's needs. This should initiate action to get the item into the AMDF, which will allow for the natural flow of the requisitions. Normal cataloging procedures would record the Army interest with the item manager if there are two demands in a 180-day period; however, we don't have that kind of agreement with the FAA at this time.

The NSN given to us by the FAA as the most popular one (as mentioned above) is 7530-01-449-4250. The following management data listed in the FEDLOG can be used to requisition the item—

- Nomenclature: Paper, Copying, Thermographic Process.

- SOS: G69.
- U/I: BX with a U/M 6000 sheets.
- Price: \$9.12.

If additional information is needed concerning any of the flight strips, call Debbie Shields at the FAA center in Oklahoma City, Oklahoma, at (405) 954-1408.

Hope this is helpful.

Chuck Zepfel
Redstone Arsenal, AL

A Better Battery

There is a battery that eliminates many Army requirements for battery shops, lasts longer and is cheaper to use than currently used batteries, and is certified by the EPA as safe for shipment with no special handling. What is this paragon of batteries? It's the commercial, off-the-shelf Optima 800 battery (NSN 6140-01-374-2243 at \$100.43 per unit).

The traditional battery used in Army ground equipment (AGE) is the flooded-cell type battery, which is unreliable, maintenance intensive, and dangerous to handle.

The Optima 800 meets or exceeds all established requirements for an AGE battery and is easily integrated into all AGE systems. This battery's material safety data sheet states that no personal protection is needed for handling, and under normal use, no special ventilation is required during charging or transportation. It has exceptional cold weather performance and has a long shelf-life. Use of this high-quality battery in Army equipment will eliminate corrosion caused by battery acid seepage or leaks, improve starting reliability, and significantly reduce battery maintenance and support costs.

How do we know all this? There were two efforts to analyze equipment and batteries. The first effort by Stra-

tegic Air Command's (SAC's) engineering division is documented in report SAC-AED-P-91-006, Integration Study of Sealed Lead Acid Batteries into Aviation Ground Equipment, dated 28 April 1992. The study identified the battery, starter, and charging system requirements and characteristics for AGE. It identified and validated AGE maintenance procedures. The second effort was conducted via SM-ALC/I-IE engineering services contract number F04606-89-D-0036 with Science Applications International Corporation (SAIC). SAIC evaluated charge acceptance of candidate batteries at cold temperatures. They also verified industry could provide a battery that would meet AF AGE requirements.

Based on the two studies, the Optima 800 was selected as the battery best able to meet AGE requirements. It is a totally sealed, spirally wound, starved-electrolyte design with two safety vents located on the top of the battery. It is rated at 800 CCA and 120 minutes of reserve capacity. It is a 56-amp-per-hour battery. Its cost is approximately \$100, which is less than the standard stock-listed, vented, flooded-cell batteries used on AGE.

The bottom line is that it is time for the Army to reap the benefits of technology developed by industry. The benefits of the Optima 800 battery are clear and compelling and are recognized by the Air Force and the Navy.

D. Max Thomas
Fort Rucker, AL

Log Notes lets you share your thoughts on logistics. You may want to comment on an *Army Logistician* article, take issue with something we've published or something happening in logistics, or share an idea on how to do things better. Your letter will be edited only to meet style and space constraints. All letters must be signed and include a return address; at your request, your name will not be published. Mail letters to EDITOR ARMY LOGISTICIAN, ALMC SUITE C300, 2401 QUARTERS ROAD, FT LEE VA.

THE ARMY POSTURE STATEMENT: "NOT THEIR FATHERS' ARMY"

The Army's fiscal year (FY) 1999 posture statement, submitted to Congress by Acting Secretary of the Army Robert M. Walker and Chief of Staff General Dennis J. Reimer, portrays a force in transition in a changing and often uncertain world. According to the Army's leaders, "The world is vastly different from that of just a decade ago; the Army also has experienced significant change. Today's Total Army is quite unlike that of only a few years ago—different in size, structure, mission, and culture. For its soldiers, not only is today's Army not their fathers' Army, it is not their older siblings' Cold War Army." Today's Army is smaller, it is stationed primarily in the continental United States (CONUS), and it is deployed more frequently to face a wider spectrum of missions. At the same time, the Army is fully engaged in an ambitious program of modernization that will change it from an Industrial Age to an Information Age force. The greatest challenge facing the Army during this time of transition is "balancing today's readiness and tomorrow's modernization requirements with available resources."

A Smaller Army

Today's Army is smaller than at any time since before World War II. Between 1989 and 1997, the Total Army reduced its strength of soldiers and civilian employees by 630,000; its number of divisions (active and reserve component) from 28 to 18; and its number of installations by over 700. More soldiers also are CONUS based than forward deployed. The percentage of soldiers based in CONUS grew from 57.7 percent of the force in 1989 to 75.2 percent in 1997, while the percentage of soldiers based in Europe declined from 31.8 to 13.7.

A Full-Spectrum Army

The Army's deployments have increased 300 percent since the end of the Cold War. On any given day in fiscal year 1997, more than 31,000 soldiers (active and reserve components) were deployed to more than 70 countries; the average deployment lasted about 4 months. Of the 32 military operations conducted by the armed forces since 1989, the Army has provided the majority of personnel in 28. All of this activity, conducted by a smaller, CONUS-based force, testifies to the Army's position as "our Nation's first full spectrum force." The Army is able to execute missions "across the full range of military operations," from "supporting local civil authorities in times of disasters, emergencies, or exceptional operations, such as the Olympics; to humanitarian relief missions; to deterring potential foes; to fighting and winning major theater wars."

A Power-Projection Army

In order to perform more missions and execute more deployments with a force primarily based in CONUS, the Army continues to improve its power-projection capabilities. Army pre-positioned stocks are one way of projecting power when needed. Seven heavy brigade sets of equipment are located abroad: three in Europe, two in Southwest Asia, one in Korea, and one afloat. By FY 2001, the Army plans to place a division base set in Southwest Asia.

To improve Army airlift capabilities, the Air Force will acquire 120 C-17A transports by FY 2003 and continue upgrades of the C-5. To increase sealift capacity, the Navy is acquiring 19 large, medium-speed,

(Continued on page 44)

(Continued from page 1)

roll-on-roll-off ships for the Army, 8 to carry pre-positioned stocks and 11 to support the surge requirements of heavy forces.

Under the Army Strategic Mobility Program, the Army is spending \$75 million in FY 1998 and \$78 million in FY 1999 to improve deployment infrastructure at installations. Projects include improving and expanding facilities for the Army's pre-positioned afloat program at Charleston Naval Weapons Station, South Carolina, and upgrading Pacific Coast containerized ammunition port facilities. The Army also will spend \$9 million for shipping containers, \$16 million for railcars, \$51 million for watercraft, \$31 million for movement control automated systems, and \$20 million for strategic deployment training in FY 1999. The Army plans to invest a total of \$3.5 billion in strategic mobility projects during FY 1998 through FY 2003.

A Changing Army

To ensure that it will maintain full-spectrum dominance on future battlefields, the Army is "changing the way it changes, . . . by shedding the traditional incremental approach [to change] and 'leaping ahead' to build future capabilities for future challenges and opportunities. By starting with a vision—projecting out to the world in the year 2025 and looking back from there—the Army can plot its course of change."

The Army's path to change is guided by Army Vision 2010, which is based on the Department of Defense's (DOD's) Joint Vision 2010 and its four operational concepts of dominant maneuver, precision engagement, full dimensional protection, and focused logistics. Under Army Vision 2010, the Army is managing change through Force XXI, advanced warfighting experiments, Army XXI, and Army After Next.

Through the Force XXI process, the Army is laying out "the requirements for the near term and future 21st century" force. Force XXI "seeks to leverage the power of Information Age technology" through the use of battle laboratories, advanced warfighting experiments (AWE's), advanced technology and concept demonstrations, and functional area assessments.

The 4th Infantry Division (Mechanized), at Fort Hood, Texas, serves as the Army's Experimental Force

(EXFOR), with its 1st Brigade acting as the Force XXI Task Force. The EXFOR allows soldiers, Army program managers, and contractors to interact and speed the fielding of new technologies.

The Task Force XXI AWE in March 1997 "validated approximately 85 percent of tested information technologies and concepts; 10 percent needed additional work; and 5 percent did not prove effective." The Division AWE last November will "lead to important division redesign decisions" this year.

The near-term result of Force XXI will be Army XXI—"an improved version of the current force, with modernized systems enhanced with the latest information technologies." The Army plans to field its first networked and digitized division by 2000 and a networked and digitized corps by 2004. The Army created by Force XXI will be "a knowledge-based force, characterized by clarity of observation, shared situational awareness, and a pace of decision-making unparalleled in the history of warfare."

The Army already has started work on Army After Next (AAN), which will produce the "land force beyond 2015." AAN consists of a series of wargames, workshops, and conferences that contribute to the development of a long-term vision for the Army and world." During 1997, there were 16 AAN workshops and conferences and the first of what will be annual AAN winter and summer wargames.

A Modernizing Army

The Army's investment priorities for the near term (FY 1999 through 2003) are "attaining information dominance by 2010, sustaining combat capability overmatch, inserting technology to extend the lives and capabilities of many legacy systems, and retiring those systems that are no longer cost effective."

For the mid-term (FY 2004 through 2010), priorities will be continued "emphasis on information dominance, along with recapitalization through technology insertion and replacement of aging equipment." In the far term (FY 2011 through 2020), "the Army will prioritize and focus its science and technology resources to leverage technological advances that support full spectrum dominance to accelerate the transition" to AAN.

"By recapitalizing worn or dated equipment, the Army can maintain the usability and effectiveness of present systems rather than invest in entirely new systems." Recapitalization also reduces operating and support costs. Examples of this program include the 2½-ton truck, 5-ton truck, and high-mobility, multipurpose, wheeled vehicle.

An important Army modernization goal is better integration of the active and reserve components. From FY 1992 to 1998, the reserve components will have received over \$21.5 billion in new or transferred equip-

ment. Among these projects will be modernizing 15 reserve component aviation battalions with the UH-60 Black Hawk utility helicopter and equipping 10 Army Reserve transport and supply companies with the heavy equipment transporter (HET). The Army also plans to convert as many as 12 Army National Guard combat brigades to combat support and combat service support units by FY 2009.

The Resource Challenge

The Army expects to save over \$10 billion during FY 1998 to 2003 by pursuing efficiencies and reforms, including "closing and realigning bases, reducing infrastructure through privatization and outsourcing initiatives, reducing personnel, and implementing DOD-approved acquisition reform initiatives. By reinvesting a large portion of these savings into modernization, FY 1999 will mark the first year of significant growth in Army modernization after a decade of decline."

Under the President's National Performance Review, the Army has established 43 reinvention laboratories and 6 reinvention centers. From August 1994, when the Secretary of the Army approved a policy to waive restrictive regulations, and January 1998, the Army waived 305 regulations, 241 of them received from reinvention laboratories and centers. Army activities have won almost 25 percent of Vice President Al Gore's Hammer Awards for Government management reforms.

In FY 1998 to 2003, the Army plans to study 56,000 positions for outsourcing, including 48,000 base support positions. The Army also plans to privatize all utility systems on CONUS installations by 2000; 15 have already been shifted to the private sector, and another 166 are under study.

Since 1989, the Army has closed 98 bases in the United States and is in the process of closing 664 bases overseas. The Army has over 150 million square feet of unneeded building space; it eliminated 47 million square feet in FY 1992 to 1997 and will demolish another 13 million square feet in FY 1998.

The Army has been a pioneer in using Government commercial credit cards to simplify acquisitions. In FY 1996, the Army became the first Government agency to surpass the one million transaction mark; in FY 1997, credit card transactions increased to 2.4 million. The Army also is a leader in using electronic commerce/electronic data interchange (EC/EDI) and is quickly achieving a paperless contracting process.

Logistics automation is a key element in the Army's efforts to modernize with the most efficient possible use of resources. By tying together several systems "under one seamless integrated system, the Global Combat Support System-Army (GCSS-A) [formerly the Integrated Combat Service Support System, or ICS³] will move logistics support into the Information Age." The

GCSS-A will integrate "unit maintenance, support maintenance, transportation, supply management, and property management functions . . . in a common system compatible with outside systems, including personnel and training management systems."

The Army's leaders also emphasize the continuing importance of logistics initiatives such as Total Asset Visibility, Velocity Management, and Integrated Sustainment Maintenance to achieving modernization efficiently and realizing the Joint Vision 2010 concept of focused logistics.

REVISED OPLOGPLN '98 CONTAINS SIGNIFICANT CHANGES

Operations Logistics Planner (OPLOGPLN) is a computer-based program designed to assist logistics planners in calculating supply usage estimates in support of operations. OPLOGPLN '98, Version 2.00, contains the most significant programming changes since the first OPLOGPLN was released in 1994.

The OPLOGPLN program has been expanded to include estimates for class VII (major end item) replacements and class V (ammunition) bulk consumption. Combat postures have been changed to reflect terms likely to be found in an operation plan (OPLAN) or operation order (OPORD) mission statement. The mission parameter set data entry screen has been redesigned to facilitate easier, more consistent data entry.

Among the other revisions incorporated into OPLOGPLN '98 are an updated and expanded table of organization and equipment (TOE) data base, updated population-based planning factors, and an extensively redesigned ammunition rate file. Minor program changes include providing the ability to select a printer port, a toggle for mouse support, and the setting of a laser printer as the default. Finally, to save space, the data base index files are no longer shipped with OPLOGPLN but are created by the program the first time it is run.

OPLOGPLN is designed specifically to support operations typically associated with multiphase OPLAN's and OPORD's. The user creates units based on standard TOE's and maps these units into task organizations. The task organizations then can be assigned to a multiphase order and assigned user-developed mission parameter sets (which essentially describe the conditions under which the task organization operates). Reports can then provide supply consumption by unit, by task organization, by phase, and by order.

OPLOGPLN '98 requires an IBM-compatible personal computer with an Intel 80386 processor or higher, 4 megabytes of random-access memory, and at least 45

megabytes of free hard-drive space. It is a DOS-based program and will run under MS-DOS 3.3 or higher (MS-DOS 5.0 or higher recommended). It will also run as a DOS program under Windows 3.1, Windows 95, and Windows NT 4.0.

OPLOGPLN '98 is an authorized product of the Army Combined Arms Support Command (CASCOM), Fort Lee, Virginia. It can be ordered online through CASCOM's home page at http://www.cascom.army.mil/multi/Operations_Logistics_Planner/. Delivery of the 3-diskette set will be made by e-mail if possible. U.S. Postal Service delivery will be used for customers without e-mail capability.

Questions or suggestions concerning the content and operation of OPLOGPLN '98 should be e-mailed to oplogpln@lee-dns1.army.mil.

LAUNDRY AND DRYCLEANING SUPPORT TO BE PRIVATIZED

The Department of Army is initiating a program that will require all continental United States (CONUS) installation garrison laundry and drycleaning operations to be privatized by fiscal year 2002 (FY 02). No impact on Government employees is anticipated, since the Government-owned facilities are operated currently by contracted personnel. Privatization is defined in Appendix 1 of Office of Management and Budget Circular A-76 dated March 1996 and paragraph 1-6j of Army Regulation (AR) 5-20 dated October 1997.

Beginning in FY 02, strong justification will be required for using base operations equipment account dollars to upgrade equipment or cover overhead costs. Funding for equipment upgrade and physical plant overhead costs also must be justified fully in future program objective memorandum submissions. Base operations equipment dollars will be allocated to support laundering and drycleaning of hospital paraphernalia and other specialty items only as defined in AR 210-130.

Until laundry and drycleaning support is privatized, no new equipment purchases or facility upgrades should be initiated for the laundry and drycleaning facilities in CONUS, unless required to prevent disruption of service.

Commands outside CONUS must review their laundry and drycleaning operations to determine when and if privatization could be accomplished.

The Office of the Army Deputy Chief of Staff for Logistics (ODCSLOG) is assembling key members of the laundry and drycleaning community to evaluate the best alternatives for converting from current operations to totally commercial contract operations. The working group will draft and staff a revision of AR 210-130.

For more budgeting guidance, contact Daniel Pur-

cell, Army Soldier Systems Command, (508) 233-6069 or DSN 256-6069, or email Dpurcell@Natick-AMED02.army.mil. For policy-related issues, call Don Stump, ODCSLOG, at (703) 614-7345 or DSN 224-7345, or send an e-mail to stumpde@hqda.army.mil.

DETECTION SYSTEM GIVES SOLDIERS EDGE

Soldiers in Southwest Asia now have some defense against the effects of biological agents. The Army has developed a biological integrated detection system (BIDS) that detects and identifies biological threats. Early detection allows soldiers time to seek medical attention before symptoms appear. Biological agents have an incubation period of several weeks; in the past, soldiers had to become ill before it could be determined if they had been exposed.

BIDS is being used for the first time in a real-world situation by soldiers of the 20th Chemical Detachment, Fort McClellan, Alabama, who are deployed to Camp Doha in support of Coalition Task Force Kuwait. A new, more automated version of the BIDS is under development.

DLA PROVIDES EMERGENCY SERVICE

The Defense Logistics Agency's (DLA's) depots and supply centers can expedite the repair parts supply process in the event of an emergency. A recent incident demonstrated the determination and dedication of DLA employees in supporting Army missions.

At 1700 on a Thursday, the DLA Defense Supply Center Columbus (DSCC) in Ohio received a call from a unit at Fort Bragg, North Carolina. The unit was scheduled to deploy at 0900 on Friday and needed several parts to repair a critical equipment item. One of the parts was available only from the Defense Distribution Depot Columbus, Ohio (DDCO). The unit was willing to take a counter-to-counter air shipment.

At 1730, the DSCC staff paged the DDCO duty officer. The duty officer agreed to coordinate the processing of the supply request at DDCO while DSCC personnel made arrangements for air transport. Two DDCO staff members who had gone home for the day were called back to the depot. They picked up the customer's document from the fax machine at the DDCO Emergency Supply Operations Center. The supply request was entered into the system, and the part was secured from its storage location.

At 1830, the DSCC staff called DDCO to report that a flight was leaving Columbus at 2025, connecting in

Atlanta, and arriving at 0042 Friday in Fayetteville. But the package had to be at the airport by 1930 and a Government bill of lading was needed. The DDCO freight rate specialist was called at home and, from memory, she provided the information for preparing the forms. At 1925, the package and the Government bill of lading were delivered to the airline counter. The Fort Bragg unit picked up the package at the Fayetteville counter before the time of deployment. From initial call to arrival in Fayetteville, the response took a little more than 7 1/2 hours.

In addition to eight supply and service centers, DLA has an Emergency Supply Operations Center that can be called at (703) 767-3700 or DSN 427-3700. For more information on materiel management and making purchases from DLA, view the Defense Logistics Support Command website at www.supply.dla.mil.

RESERVE PROGRAM OFFERS BATTLE-FOCUSED TRAINING

One hundred qualified enlisted soldiers are participating in the pilot Reserve Associate Support Program (RASP), which began last March. The RASP places reservists with selected military occupational specialties (MOS's) in initial 2-year, active-duty assignments followed by 4-year tours in early deploying units. An additional 2-year reserve obligation can be served in the same unit or in the Individual Ready Reserve.

General Thomas J. Plewes, Deputy Commanding General of the Army Reserve Command, said the RASP was created to provide "battle-focused training and experience for Army Reserve first-to-fight units." The RASP benefits both the active Army and the Army Reserve. The active Army will have reserve soldiers working full time for 2 years at no cost. The Army Reserve, which is funding the program, will receive soldiers with 2 years of Active Army experience. Volunteers for the program receive a \$5,000 bonus and a student loan repayment program benefit up to \$20,000, which is \$2,000 more than the usual bonus and a repayment benefit increase of \$10,000.

The MOS's selected for the pilot program are 12B, combat engineer; 31U, signal support systems specialist; 43M fabric repair specialist; 44B, metal worker; 51B, carpentry and masonry specialist; 51M, firefighter; 51T, technical engineering specialist; 63B, light wheel vehicle mechanic; 63S, heavy wheel vehicle mechanic; 77F, petroleum supply specialist; 77W, water treatment specialist; 88M, motor transport operator; 88N, transportation management coordinator; 92A, automated logistical specialist; 92M, mortuary affairs specialist; 92Y, unit supply specialist; and 95B, military police. If the

program is successful, it could be expanded to include more MOS's and as many as 4,000 reservists.

For more information, contact Captain Gualberti Santiago, RASP project officer, at (800) 359-8483, extension 464-8927.

MODERNIZATION EFFORT WILL GET DOCTRINE TO THE FIELD FASTER

Army doctrine developers hope to cut production time of doctrinal publications by 6 to 8 months as part of a program to make doctrine more relevant and accessible to the Army in the 21st century. Other initiatives include changing the numbering system for Army field manuals to conform to the joint doctrine identification method and making the publications available on the Internet.

"The average production time now is 16 to 18 months from the time you decide to rewrite a current field manual until it is actually in the user's hand," said Brigadier General Edward T. Buckley Jr., deputy chief of staff for doctrine (DCSDOC) for the Army Training and Doctrine Command (TRADOC).

DCSDOC personnel are working with developers in the office of the TRADOC deputy chief of staff for training to make doctrine development more efficient. A module that will enable doctrine to be created has been added to the Army's Automated Systems Approach to Training program.

Buckley said that changing the method for numbering and titling doctrinal manuals will make a seamless link between Army and joint doctrine. For example when the Army's key warfighting manual, Field Manual 100-5, Operations, is updated, it may become Army Publication 3-0, Operations. That would match Joint Publication 3-0, Doctrine for Joint Operations, which is the overarching doctrine of how all of the armed services fight together.

Although changing the numbering system of Army doctrinal publications has not yet been approved, surveys of major commands, corps, and divisions in the United States and overseas revealed unanimous support for aligning Army doctrine with the joint system. A similar survey of TRADOC commanders and commandants received the same response.

Users with proper access can download the new manuals from a website that will be part of the Army Doctrine and Training Digital Library. Army Training Support Center specialists also have placed all Army doctrinal publications, as well as those for tactics, techniques, and procedures (TTP's), on five CD-ROM's. Putting the publications on CD-ROM's means that units no longer will have to carry crates of publications to the field.

DCSDOC also is leading an effort to develop TTP's for the digitized combat units. "Doctrine for the digitized force will be very similar to doctrine for the current force, but the tactics, techniques and procedures will be different," Buckley said. TTP's will spell out how today's Army of Excellence units and Army XXI forces can operate together on the same battlefield.

As part of their doctrine modernization effort, DCSDOC will solicit input from the Army National Guard and Army Reserve to "...ensure that the content of doctrine and our methods of developing and distributing it are relevant to their environments," Buckley said. "They're part of the Total Army, so it's important to ensure that the capabilities they need are, in fact, there for them in the 21st century."

TWO MORE BRAC ROUNDS FORECAST FOR NEXT DECADE

In a report released last April, Secretary of Defense William S. Cohen said that two additional rounds of base realignment and closure (BRAC) in the next decade will save the Department of Defense (DOD) more than \$20 billion between 2008 and 2015 and \$3 billion every year thereafter.

According to *The Report of the Department of Defense on Base Realignment and Closure*, the first four BRAC rounds will have saved \$25 billion by 2003 and will save \$5.6 billion each year thereafter. The report further states that BRAC savings are critical to meeting the three key elements of DOD's Quadrennial Defense Review strategy: The U.S. military must *shape* the international security environment day to day; *respond* to crises across the full spectrum of operations; and *prepare now* to meet future threats.

The value of \$20 billion to each of the military departments through 2015 is equivalent to the cost of all 650 Comanche helicopters and all 800 Crusader advanced artillery systems planned for the Army; or 2 next-generation aircraft carriers and 12 surface combatant ships for the Navy; or 450 joint strike fighters for the Air Force; or all 1,000 advanced amphibious assault vehicles and almost all (250) of the joint strike fighters planned for the Marine Corps.

"Our need is clear and compelling," Cohen said. "The Department of Defense has more base capacity than is required to meet the needs of our fighting forces. Eliminating this excess capacity will save the Department billions of dollars. These resources will help ensure that the Department can sustain our high state of readiness and provide our troops with modern weapons."

More BRAC information is available on the Internet at http://www.defenselink.mil/other_info/brac.html.

VALUES-BASED TRAINING AHEAD FOR NEW RECRUITS

Beginning in October, Army basic combat training (BCT) will be expanded from 8 weeks to 9 weeks so recruits can receive more intense training in the Army's core values. Each of the seven values—loyalty, duty, respect, selfless service, honor, integrity and personal courage—will be incorporated as BCT themes throughout the 9 weeks. The extra week of training (54 hours) will cost about \$8.6 million in fiscal year 1998.

"The goal of the expanded training is not only to make the training experience even more rigorous, but also to provide additional human relations training and allow more time for the inculcation of Army values into our newest soldiers," said Lieutenant General William Bolt, deputy commanding general for initial entry training (IET), Army Training and Doctrine Command (TRADOC). "The intent is to challenge new volunteers and have them emerge from IET as proud values-based soldiers."

IET includes BCT and advanced individual training (AIT), in which soldiers are trained in their military occupational specialties. One station unit training (OSUT) is also part of IET. OSUT, which also will be lengthened by 54 hours, combines BCT and AIT for some career fields.

Additional BCT hours will give drill sergeants time to conduct after-action reviews at the end of each week to remind their platoons about what they have been taught and to reemphasize the Army value theme for that week. Likewise, company commanders will have more time to conduct sensing sessions midway through and at the end of BCT to solicit feedback from the trainees about their overall BCT experience.

Prevention of sexual harassment and sexual misconduct will be taught in an additional 27 hours of human relations training. However, those subjects will be taught in the context of Army values.

Soldiers going through the longer BCT still will be required to meet standards in traditional training tasks such as weapons qualification, hand grenade throwing, road marches, obstacle and confidence courses, and the Army physical fitness (PT) test. In fact, the increased time gives recruits 6 more hours of PT.

Four hours will be added to the 3-day field training exercise (FTX) at the end of BCT. The FTX, which places strenuous physical demands on trainees, reinforces all of the training given during BCT. All training tasks in the current FTX will continue, but the additional 4 hours will allow them to become more challenging.

"The FTX is a culminating event that will let the soldiers say, 'We've really done something and now we're soldiers,'" Buckley said.

Soldiers who go on to AIT will receive reinforcement values-based training there. Rather than increase the lengths of AIT courses, which range from 4 to 52 weeks, POI's will be rewritten to include 16 hours of values-based training. It also is expected that when soldiers report to their first units, values will be reinforced within the organization.

"We think that when soldiers leave the training base, whether it's OSUT, a 4-week AIT, or a 52-week AIT, and they go to their first unit, they will be inculcated with Army values, traditions and heritage," Buckley said. "The soldier will be ready to function in that environment, and that should translate into increased readiness."

LOGISTICS ENGINEERS TO MEET

The International Society of Logistics Engineers (SOLE) will meet 25 to 27 August at the DoubleTree Hotel Seattle Airport, Seattle, Washington. The theme for this year's conference is "Logistics Resources for the 21st Century." Additional information about the conference and online registration are available through

the SOLE home page, <http://www.sole.org>. Telephone inquiries should be directed to (301) 459-8446.

NDT CONFERENCE PLANNED

The 47th Defense Working Group on Nondestructive Testing (NDT) conference will be held 2 through 6 November at the Handlery Hotel and Resort, San Diego, California. This annual meeting is for Government military and civilian personnel who develop or apply NDT methods in research, engineering, maintenance, and quality assurance. One of the major issues again this year will be NDT personnel qualification and certification.

Those interested in presenting technical or problem papers at the conference must submit an abstract by 26 June to Mike Lincoln, COMNAVSURFPAC, Code N4354, 2841 Rendova Road, San Diego, California 92155. Contact Mr. Lincoln at telephone (619) 437-0750, fax (619) 437-0744, or e-mail n4354@cnsp.navy.mil



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The Case for the Theater Support Command

by Lieutenant Colonel Ronald N. Cussins

As the Army continues to downsize, the debate over how best to structure and manage theater logistics continues unabated. Advocates of functional commands, such as engineer, transportation, personnel, finance, and medical, believe that they should remain "stovepipe" commands reporting directly to the Army service component commander (ASCC). The theater support command (TSC) concept, on the other hand, describes the functional commands as potential subordinate commands of the TSC. However, there is more to the TSC concept than the issue of the functional commands' role. Getting the "right" command and control (C2) logistics headquarters in theater early is the key to providing the combatant commander with responsive and focused logistics at the decisive time and place.

The TSC concept is an integral part of the effort to reshape logistics commands at the operational and tactical levels. The intent is to design organizations that not only look similar in organizational structure but are similar in function. For example, support operations sections at the division support command, corps support command, and TSC levels all have distribution management centers (DMC's). By design, counterpart positions facilitate staff coordination, communication, and understanding throughout the theater. More importantly, the common structure helps nonlogisticians understand whom they need to contact at higher and lower levels. Here is a description of the TSC's capabilities and how it fits with other emerging logistics concepts and doctrine.

Historical Perspective

Ask any Army logistician about theater-level logistics, and he probably will tell you about the 22d Support Command stationed at Dhahran, Saudi Arabia, during Operations Desert Shield and Desert Storm. In a little less than 18 months, logisticians were asked to build a theater logistics structure, provide logistics support to more than 365,000 soldiers, redeploy the forces and their materiel, and close out the theater.

How big was that logistics effort? Consider these numbers. Approximately 95 million meals were served—enough to feed the population of Rhode Island

for a month. Over 32,000 tons of mail were received in theater. Almost 1.5 billion gallons of fuel were pumped—more than the annual consumption of 17 of the 50 states. Convoys traveled a cumulative distance of 64 million miles—the equivalent of circumnavigating the Earth 2,570 times. Over 117,000 wheeled vehicles, almost 13,000 tanks and other armored tracked vehicles, and 1,749 helicopters were moved into theater, used in combat operations, and returned from Southwest Asia. Over 350,000 tons of ammunition were shipped into the theater and retrograded to the United States and Europe. It was, without question, a monumental effort when compared to any other modern-day logistics operation.

Was the logistics system a success? Yes and no. What was accomplished certainly supported the combatant commander's intent and, perhaps more importantly, did not impede the conduct of the war. Yet while the Army demonstrated its ability to manage "mass" by expeditiously shipping tons of warfighting materiel to the Gulf, serious problems developed at aerial and sea ports of embarkation and debarkation.

For example, a breakdown in the issue priority system crippled the transportation system's ability to make air lines of communication shipments. And despite using the best technology in the world to manage the flow of materiel, approximately 22,000 containers had to be opened in theater to determine their ownership, contents, or destination. A later examination of Persian Gulf logistics operations showed that units reordered supplies when requisitions were not filled expeditiously. Cancellations of "old" requisitions never caught up with the original requests, so the system responded to both requests. The result of all this requisitioning was a mountain of unneeded supplies at the end of the war.

So what lessons were learned from the Persian Gulf War? First, we violated our doctrine by not employing the C2 structure designed to accomplish the theater mission: the theater army area command (TAACOM). (The use or nonuse of the TAACOM is beyond the scope of this article.) The result—intentionally—was an ad hoc C2 organization. Second, we learned that intransit visibility and total asset visibility are required to improve operational efficiency in theater. Third, the Persian Gulf

War experience reinforced the need for early deployment of theater logistics assets to establish operating procedures and clear the ports. Finally, we recognized that some type of structure is required to maintain a "total requirements" versus "capabilities" picture so that conflicting priorities can be reconciled and scarce resources used in accordance with the ASCC's guidance.

Why a Theater Support Command?

In conformance with the principle of unity of command, the TSC centralizes C2 of combat service support (CSS) units and some combat support units at the operational level. It provides a single point of contact for the warfighter and for synchronizing theater logistics. A critical assessment of U.S. Army engagements since World War II shows that ad hoc theater support commands evolved out of necessity but were terribly inefficient and wasteful. During the current period of downsizing, fiscal constraints, and changing national military strategy, the TSC goes a long way toward establishing the critical link between strategic and tactical logistics. It is tailorable and flexible enough to deploy immediately to any region of the world in support of our national military strategy and for a variety of missions, ranging from theater-level war to operations other than war.

The current theater-level logistics organization is not designed to support a force projection concept. The TAACOM is not modular in design and cannot perform split-based operations. Although a TAACOM typically forms ad hoc "log cells" similar to the one established in the 22d Support Command during the Persian Gulf War, these cells are created "out of hide" and lack the connectivity that the TSC can provide. More importantly, a TAACOM is not designed to provide "one stop" logistics support to the warfighters, which contributes to competition for and misallocation of critical transportation resources.

What Does the TSC Offer?

The TSC concept supports our national military strategy of power projection. The TSC is modular in design and capable of rapid deployment to a theater of operations. The modular design minimizes strategic lift requirements by deploying the minimum structure needed to accomplish the mission successfully, thereby ensuring a logistics presence during the critical buildup phase of operations. The Persian Gulf War taught us the importance of establishing a theater-level logistics plan early in a deployment and keeping ports open to receive materiel from the strategic-level sustainment base.

The TSC element responsible for establishing the intheater infrastructure and conducting reception, staging, onward movement, and integration (RSOI) operations is the theater force opening package (TFOP). A

typical TFOP early entry module (EEM) needed during the initial buildup phase includes transportation, medical, engineer, supply, contracting, and medical modules, as well as strategic logistics cells from the Defense Logistics Agency's (DLA's) Defense Energy Support Center, the Military Traffic Management Command, the Army Materiel Command (AMC), and other organizations.

A TSC battle-rostered EEM provides logistics C2 during the initial phase of the operation. In addressing the controversial issue of the role of the functional commands assigned to the theater, the TSC concept calls for the EEM to include elements from those commands (such as engineer and transportation). This particular feature of the concept was revised to indicate that the EEM could be attached directly to the ASCC, if desired. In addition to elements from the functional commands, the TSC EEM will deploy with elements from its supporting materiel management center (MMC) and movement control agency (MCA). The EEM is intended to provide an early-entry C2 capability that will allow the commander in chief (CINC) to build his echelons-above-corps support structure at the same time as his combat power increases.

The significance of the modular design becomes apparent when one considers that the majority of continental United States-based functional commands are reserve component organizations. Most have an immediate deployment capability consisting of active component and active Guard/Reserve soldiers. The rationale is that these soldiers can deploy on short notice as the EEM's for their respective commands while the mobilization process is being implemented.

The TSC concept envisions the buildup of logistics forces in a theater as a three-phased process. During phase 1 (D+1), the TSC EEM deploys to the theater of operations. The EEM's from the five functional commands also deploy and are attached to either the TSC or the ASCC. At phase 2 (D+10 to D+30), the balance of the TSC deploys into the theater to establish full-scale logistics operations. At the same time, five functional modules representing the functional commands deploy to increase the capability of the functional EEM's. The functional modules become staff directorates within the support operations section of the TSC. At phase 3 (D+30, or as directed by the ASCC), the functional command headquarters deploy to the theater of operations and assume command of their respective modules. The ASCC will decide whether the functional commands are subordinate commands of the ASCC or the TSC.

To improve distribution operations in force projection theaters, a DMC was added to the support operations section at each echelon. The DMC's purpose at the operational level is to synchronize distribution operations and maintain control over units and materiel flow-

ing into and out of the theater. The DMC's primary function is to deconflict competing priorities and work loads in the MMC, MCA, and medical logistics management center. It also provides staff supervision to the functional management centers and ensures that CINC and ASCC priorities are enforced.

Unlike the TAACOM, the TSC has two deputy commanders. The deputy commander for internal operations/chief of staff supervises the general staff and is concerned with day-to-day operations of the TSC and its subordinate units. The deputy commander for support operations is responsible for theater-level logistics and focuses on supporting the warfighter.

Establishing a Seamless Logistics System

Army logisticians, above all others, realize that our ability to effectively project, sustain, and redeploy soldiers and units must be improved. Our objective is to develop a logistics system that is as capable as the forces it supports. It must be able to respond rapidly, track and redirect shipments en route, and deliver tailored logistics packages at the tactical level.

The TSC concept complements several other initiatives designed to improve the efficiency of the logistics system and create a seamless system of support from the strategic to the tactical level—

- At the strategic level, support elements fill the CSS pipeline with personnel and equipment required by the CINC. A key element in this effort is a Department of the Army velocity management initiative that focuses on eliminating sources of delay or undependability in logistics processes.

- At the operational level, battlefield distribution's hub-and-spoke distribution system is designed to clear ports rapidly through the use of an inland distribution terminal and satellite supply support activities. The RSOI concept focuses on building combat power by speeding integration efforts and optimizing the flow of forces.

- Technology enhancements, such as total asset visibility, intransit visibility, radio frequency identification, automatic identification technology, the Movement Tracking System, and the Standard Army Retail Supply System, are critical to successfully establishing a seamless logistics system.

Testing the TSC Concept

As we continue to develop *the* logistics system for the 21st century, new concepts must be assessed critically to ensure that we are developing the right capabilities for the next generation of warfighters. After it was directed to test the TSC concept, the Army Combined Arms Support Command (CASCOM) at Fort Lee, Virginia, developed a concept evaluation plan to assess

contentious issues related to the TSC. In addition to the evaluation plan, a special text for the TSC and a "how to" manual for the DMC were developed quickly to assist the units selected to play the TSC in the evaluation. Three exercises—Roving Sands '97, RSOI '97, and Prairie Warrior '97—were chosen as test locations because their cumulative scenarios would provide the opportunity to assess all issues at least once, and some issues more than once.

The Operational Test and Evaluation Command (OPTEC), an active participant in the planning, training, and data collecting effort, assessed the concept based on the data collected at the three test locations. OPTEC reached these conclusions—

- Early indications are that the TSC organization and concept represent an improvement over the current TAACOM structure.

- The TSC concept met the need to establish unity of command over RSOI and sustainment functions within the theater of operations.

- Integration of functions within the DMC enhances overall coordination.

- DLA and AMC participation in the TSC had a positive impact on the linkage between operational logistics and the strategic-level sustaining base.

The results of the TSC concept evaluation were briefed to the Chief of Staff of the Army by Major General Robert K. Guest, then CASCOM commander, on 11 August 1997. The Chief of Staff approved the TSC concept force design update, parts I and II, with modification. Specifically, the Army Training and Doctrine Command was tasked to conduct a validation exercise in fiscal year 1999 for the TSC concept and to have a group of retired general officers known as the "Wise Persons" look at and evaluate the TSC concept during that exercise.

Logisticians should feel confident about the TSC and the holistic approach to developing a seamless logistics system from the strategic to the tactical levels. Initiatives such as the TSC, battlefield distribution, and velocity management, and the technology enhancements associated with each, are leading the way in developing the capability to provide logistics support quickly, anywhere in the world.

ALOG

Lieutenant Colonel Ronald N. Cussins is an Active Guard/Reserve officer assigned to the Army Combined Arms Support Command in the directorate of combat developments for combat service support. He served as a member of the TSC concept evaluation team.

Movement Control in Europe

by Captain John D. Kaylor, Jr.



From normal operations to major contingency operations, movement controllers play a vital role in the transportation process.

Movement control in the European theater operates on the basis of centralized control and decentralized execution. The 1st Transportation Movement Control Agency (1st TMCA), headquartered in Kaiserslautern, Germany, is the theater movements manager. It accomplishes its mission through command and control of two movement control (MC) battalions and through coordination with the 27th Transportation Battalion (MC), which is the movement control center for V Corps.

The 1st TMCA's two MC battalions are the 14th Transportation Battalion (MC), which monitors transportation in Italy, and the 39th Transportation Battalion (MC), which oversees transportation in Belgium, Luxembourg, the Netherlands, and Germany (except the northern part of Bavaria and Hessen, which are the 27th's responsibility). The MC battalions have movement control teams (MCT's) and air terminal movement control teams (ATMCT's) that are responsible for coordinating and monitoring transportation services for Department of Defense and other designated agencies located or operating in their geographic area of responsibility (AOR). The MCT's are essentially the link between the customer and the transportation provider. In the continental United States, the installation transportation office normally performs these functions.

Movement Control Teams

The MCT's are divided into branch movement control teams (BMCT's), highway movement control teams (HMCT's), and rail movement management teams (RMMT's). The BMCT's provide transportation support to units. The HMCT's, which are collocated with the German regional highway movement headquarters, process and coordinate road clearances. The RMMT's are responsible for rail issues.

The MCT's usually are split further into four sections: highway clearance, export, containers, and freight. (The structure and functions of a port MCT differ somewhat from the inland MCT, but the procedures they follow are essentially the same.)

The highway clearance section coordinates customer road movement bids directly with the HMCT. The export section acts as a liaison between the customer and the Ocean Cargo Clearance Authority-Europe (OCCA-E) during the processing of export shipments. It reviews each export release request (ERR) and passes it on to OCCA-E. The OCCA-E issues an export traffic request (ETR) that contains shipping instructions and vessel-booking data. This information is forwarded by the export section to the customer. The ETR establishes a spot on the ship for that customer's cargo.



□ At left, pallets are stacked in trailer loads at Ramstein Air Base, Germany, for throughput either to the consignee or to the theater distribution center. Above, shrink-wrapped helicopters are offloaded from a ship in the Port of Rotterdam, The Netherlands.

The export section monitors the shipment from the time the ETR is received until the cargo departs the shipping activity.

The primary responsibilities of the container section are to monitor the arrival, unstuffing, and pickup of containers within the MCT's AOR and minimize detention. Seven workdays are allowed for container offload before detention charges begin. The carrier is allowed 3 workdays to pick up the empty container before re-detention charges are levied.

To understand the role of the container sections at both the inland MCT's and the port MCT at Rotterdam, The Netherlands, you first must understand the flow of containers. In the continental United States (CONUS), a container is stuffed and the shipper (consignor) prepares a transportation control and movement document (TCMD). The TCMD contains cargo and movement data such as the names of the consignor and consignee and a description of the contents. When the container reaches the port, the information on the TCMD is transferred onto an ocean cargo manifest and entered into the Worldwide Port System (WPS). The data are sent over the WPS from Military Traffic Management Command (MTMC) Eastern Area to MTMC Europe. When they receive the manifest information, MTMC Europe prints hard copies of the TCMD's and gives them to the MCT Rotterdam container section. The primary responsibility of the container section is to screen TCMD's of inbound containers to ensure proper delivery to the customers.

Container vessels depart CONUS from a variety

of ports. The MTMC Eastern Area maintains visibility of these vessels through the WPS. They arrive at either the Port of Rotterdam or the Port of Antwerp, Belgium. The 1318th Medium Port Command, MTMC Europe, controls both ports. Containers that are loaded on commercial trucks are delivered directly to the customer. Containers departing by rail or barge are destined for the two inland container terminals at Mainz and Gernersheim, Germany, where they are processed and sent on to the customer within the 8-day delivery standard.

The freight section is the largest element of the MCT. It determines the cargo transportation mode and assigns transportation movement release (TMR) numbers. The TMR number is an alphanumeric code that denotes the mode of transportation and provides instructions for the freight movement.

The freight section is further divided into two basic functions, inbound and outbound. Inbound receives notification of shipments entering its AOR and passes this information to the BMCT or customer. Outbound issues TMR numbers for freight being shipped by the 37th Transportation Command or commercial shippers. The freight section first decides whether shipment by military trucks is possible or feasible. If military transportation is not used, the MCT then determines the appropriate commercial mode (rail, truck, or barge) based on required delivery date, cargo, destination, and cost. At the port, the freight section works directly with



□ A soldier guides a vehicle onto a railcar at Hanau, one of many rail sites in Germany.

MTMC Europe to clear cargo to and from the port.

The BMCT is a subordinate unit of the MCT and provides freight and unit movement transportation services to all customers within its AOR. It is the first stop for customers seeking transportation support. The BMCT processes all less-than-release-unit (LRU) shipment requests and forwards all release-unit shipment requests to the MCT freight section for mode determination. LRU shipments weigh less than 10,000 pounds and their dimensions do not require theater movement clearance. LRU shipments do not require TMR numbers. Release-unit (RU) shipments are of a specific size, weight, commodity, or mode that requires clearance and TMR number assignment.

After the BMCT receives a request, validates the information, and confirms the shipment priority, it fills out a freight movement request worksheet and forwards it to the MCT freight section. The freight section determines the transportation mode and priority (if an RU shipment) and assigns it a TMR number. The BMCT then makes the appropriate transportation arrangements and passes on to the requesting unit the TMR number, spot number, pull date, and required delivery date. If commercial transportation is used, the BMCT makes commercial transportation arrangements.

The HMCT is another subordinate element of the MCT. It functions as a liaison between U.S. Forces and German movement control authorities to process road movement requests for all U.S. military traffic originating within its AOR. The HMCT's primary function is to receive, verify, and coordinate all road movement requests and issue the approved road clearance according to the provisions of U.S. Army, Europe, Regulation 55-1, U.S. Army Motor Vehicle Operations on Public Roads; and German highway regulations. Convoys and movements of overweight or oversize loads require a road clearance.

The RMMT is the MCT's single point of contact for rail issues between U.S. Forces and the Deutsche Bundesbahn (the German railway system). The RMMT works closely with the freight section to ensure proper coordination and use of rail assets and assists units as necessary throughout the entire rail movement process.

Air Terminal Movement Control Teams

The ATMCT is the Army liaison with the Air Force. It arranges transport, coordinates loading, and expedites movement of personnel and materiel (inbound, intratheater, and retrograde) through Air Force terminals. There are three ATMCT's in Europe—one in Italy (Aviano); and two in Germany (Rhein Main and Ramstein Air Base). The procedures for all three are generally the same. However, Ramstein Air Base is the primary airfield for inbound and outbound shipments of military cargo and personnel. Units that want to ship

on Air Force C-141 Starlifters must send a TCMD through the local BMCT. The TCMD contains the basic cargo and movement data that the ATMCT needs to book the cargo on a plane.

When cargo arrives at Ramstein, the Air Force unloads the plane using Air Force materials handling equipment. The pallets are offloaded in the pallet yard. Loose cargo is sent to the warehouse, where it is sorted by customer. It takes 6 to 10 hours to offload a plane completely. ATMCT pallet yard personnel check the pallets against the air manifests. Then the pallets are stacked in trailer loads for throughput either to the consignee (single or multistops) or to the TDC. Sequence sheets are filled out and given to the Air Force. Air Force personnel create the TCMD and load the trailer. ATMCT personnel review the TCMD, check it against the trailer, assign a TMR number, and call the 37th Transportation Command to pick up the trailer.

Funding

The 1st TMCA is the USAREUR transportation fund manager. It allocates funds, through the battalions, to the MCT's by issuing a fund certification authority (FCA) commercial funding memorandum. In short, the FCA provides to the MCT the authority to cite and certify fund availability directly for commercial transportation of U.S. Government freight. The MCT then allocates the appropriate funds to each BMCT. Only the commander or traffic manager of the MCT has the authority to authorize the use of commercial transportation (within allocated fund cite authority) and only when military highway assets are not available. Limitations on the use of these funds (called P42 funds) are explained in the FCA memo. Moves not funded by P42 funds usually are covered by a unit's own fund cite or special funds allocated for a particular exercise or contingency.

I have discussed only a few of the responsibilities and functions of movement controllers in the European theater. Easily identified by their red arm bands, movement controllers are found anywhere transportation moves are happening. From normal operations or exercises to major contingency operations and deployments, they play a vital role in the transportation process.

Captain John D. Kaylor, Jr., is assigned to the 27th Transportation Battalion (MC) in Wiesbaden, Germany. He was assigned previously as an MCT operations officer in the 39th Transportation Battalion (MC). He has a bachelor's degree in sociology from Florida Southern College and is a graduate of the Transportation Officer Basic Course, the Combined Logistics Officer Advanced Course, and the Combined Arms and Services Staff School.

Maintenance Support of the ISB

by Captain Christopher J. Whittaker

The commander of the 503d Maintenance Company tells of his unit's year-long deployment to the intermediate staging base in Taszar, Hungary.

The 503d Maintenance Company, 1st Corps Support Command, Fort Bragg, North Carolina, received notification on 9 May 1997 to deploy in support of Operation Joint Guard. A nondivisional maintenance company, the 503d provides backup direct support to the 82d Airborne Division and direct support to the XVIII Airborne Corps Artillery, 35th Signal Brigade, 16th Military Police Brigade, and 525th Military Intelligence Brigade. I am the company commander.

We deployed on 6 August 1997 to provide maintenance support to the intermediate staging base (ISB) in Taszar, Hungary. We assumed the mission from the 742d Maintenance Company, a South Carolina Army National Guard unit. They provided us with vital information before we deployed, which gave us the opportunity to task-organize in advance.

Welcome to the ISB

An ISB offers tactical and operational commanders an opportunity to gather information on the area of operations and finalize plans for deployment. It also gives units time to redistribute and finalize their accompanying loads. The ISB in Taszar is the last stop before deploying into Bosnia. There, personnel are reunited with their equipment, which arrives in the ISB by rail. Units can draw ammunition in the ISB, and they have the opportunity to conduct limited central issue or direct exchange as well.

Escorts are on call 24 hours a day to guide units through deployment and redeployment processes. Once a unit hits the ground, the escorts make sure that it completes all processing checklists. It usually takes 4 days to process units that are deploying into Bosnia and 7 days to process redeploying units.

At the ISB, we lived in tier III tents, which are nothing more than rubberized medium general-purpose tents with wooden flooring, 4-foot wooden walls, and wooden doors. They substantially improve the quality of life in adverse weather. In the summer, fans are common; in the winter, kerosene heaters are the standard. Onsite facilities include a PX, snack bar, weight room, postal and finance offices, and a chapel.

503d Mission

We received our equipment at the ISB railhead 2 days after our arrival. By the 14th of August, we had completed the transition of authority and assumed the mission. Our mission did not quite "match" the personnel and equipment in our unit modification table of organization and equipment. We ran a direct-support maintenance base shop and three mobile maintenance teams (MMT's): one at the marshaling area; one at the redeployment staging base (RSB) in Slavonski Brod, Croatia; and one at the convoy support center in Virovitica, Croatia. We also ran a repair parts supply support activity and an organizational motor pool. Most of our shops, with the exception of the direct-support base shop, consisted of one to three soldiers and their equipment. Other missions assigned to the 503d included oversight of the marshaling area, railhead, and life support area, and operation of the maintenance verification team. We also provided support to dining facility operations.

Our tempo was either “steady state” or “surge.” Steady state meant that virtually no units were transiting the ISB; surge meant the high activity generated by deploying or redeploying units.

Direct-Support Base Shop

Our direct-support base shop was established around the automotive base team. It had a core of automotive mechanics and a thin layer of communications, fuel, electrical, welding, and recovery personnel. The primary focus of maintenance was to ensure that units were mission capable to roll into Bosnia. Tenant units were relegated to a lower priority of maintenance during surge periods.

The base shop was located in an old MIG fighter hangar. The hangar provided space for up to seven vehicles at a time. Much of the base shop’s business was generated by the transportation units that performed vehicle recovery operations over a wide area in Hungary and Croatia.

Marshaling Area

The marshaling area was a staging area for wheeled vehicles. Its capacity was 650 wheeled vehicles, depending on their size and type. The marshaling area assumed control of all vehicles in the ISB. Washrack activities, maintenance, and issuing of water and meals, ready to eat, also were conducted at the marshaling area. There were 20 bays available to units for organizational maintenance or other unit activities. MILVAN’s were stored in a designated container-holding area while awaiting movement or inventory. The duties in the marshaling area were nonspecific and could be accomplished by personnel in any military occupational specialty (MOS).

The MMT forward was located in the marshaling area. It was exclusively an automotive team that provided 24-hour maintenance wherever the vehicles were staged for either deployment or redeployment. The MMT forward’s facilities consisted of four maintenance tents, four medium general-purpose tents, and a shop van. Its assigned equipment usually consisted of a wrecker, a contact truck, an M129 shelter, and some 2⁺-ton cargo vehicles. It had access to the Standard Army Maintenance System (SAMS)-1 for accurate job status and history.

Slavonski Brod MMT

The MMT in Slavonski Brod, Croatia, was perhaps the most “doctrinal” operation in the company. Although part of the company, the Slavonski Brod MMT operated under the control of the RSB there, which was directed by Task Force Pershing. (Task Force Pershing receives guidance and supply support from Task Force Eagle in Tuzla, Bosnia, and serves a midway point for



□ Soldiers of the 503d Maintenance Company supervise the upload of redeploying 1st Infantry Division equipment at the ISB.

deploying and redeploying convoys.)

One of the critical missions of the Slavonski Brod MMT was to support the float bridge company that made it possible for armored vehicles to deploy across the Sava River. This MMT’s mission also included supporting the National Support Team based in Zagreb, Croatia. In December 1997, military intelligence and civil affairs units in Croatia and Bosnia were placed under the control of the National Support Element (NSE) in Tazsar, Hungary. These areas were further divided into the National Support Team (NST) Zagreb and NST Sarajevo (Bosnia). The units under the jurisdiction of NST Zagreb were located across the Croatian countryside. Most of them operated without an organizational motor pool or direct-support maintenance, so the Slavonski Brod MMT provided back up organizational maintenance and direct support as well.

Convoy Support Center

The convoy support center (CSC) in Virovitica, Croatia, was a temporary measure on a permanent site. The CSC’s personnel and equipment composition was similar to that of an MMT, except that it was augmented with personnel who provided traffic control and administration. The CSC was located 100 miles from the ISB

and provided a midway point for convoys to get quick maintenance and take a break. "Quick maintenance" is adjustments or repairs that can be made in 40 minutes or less and is mostly organizational work. The CSC was augmented with a 5-ton tank and pump unit for emergency refueling and an ambulance for level I medical care. (For more detailed information on CSC operations, see "Convoy Support Center Operations in Croatia" on page 36.)

Supply Support Activity

The SSA was located in a large clamshell building at the main airfield in Taszar. It provided class IX (repair parts) support to tenant units as well as to deploying and redeploying units. Its 374 authorized stockage lines were tailored to the tenant unit fleets of M998 high-mobility, multipurpose wheeled vehicles, M1008 cargo trucks, M915 tractors, and materials handling equipment. The SSA supported 30 customers using the Standard Army Retail Supply System-Objective and the Materiel Release Order Control System.

Motor Pool Operations

Some of the tenant units did not have mechanics, tools, or automation. Although it was tailored to support our 160 pieces of rolling stock, our motor pool was tasked to provide organizational maintenance to 13 units at the ISB in addition to our own.

Railhead Operations

The railhead managed the unloading of wheeled and tracked vehicles and containers. The railhead usually was staffed with two teams during nonsurge periods. These teams did not actually unload the train cars themselves but provided guidance and safety oversight to the owning units. The teams furnished the necessary blocking, bracing, and tie-downs (BB&T) needed by the units passing through the ISB and conducted BB&T classes for redeploying units. The rail team operated at both a north and south railhead. Its job was non-MOS specific and required only a couple of special rail tools.

The north railhead could accommodate both side and ramp loading. The south railhead had the capability for ramp loading only. An alternate site for unloading was located in the city of Kaposvar, Hungary.

Life Support Area Activities

The life support area (LSA) managed personnel services that included a PX, laundry and dining facilities, chapel, movie theater, weight room, phone tent, and fest tent. Soldiers there were housed in medium general-purpose tents.

The life support area staff issued tents to transient units, monitored the dining facility and fest tent, and provided a liaison for maintenance and quality of life

issues. Maintenance, cleaning, and dining facility operations were contracted through Brown and Root Services Corporation. The cooks acted as Army representatives at the three dining facilities. Working in shifts, they monitored ration breakdown and provided quality control within the dining facilities.

The maintenance verification team performed technical spot checks on 10 percent of the equipment passing through the ISB and forwarded their findings to the team officer in charge and to the appropriate units. The units then were expected to make corrections through maintenance or supply channels as appropriate. Members of the 503d Maintenance Company served as a part of the total verification force that evaluated the overall readiness of units.

Extracurricular Activities

Soldiers in the 503d Maintenance Company had many opportunities to travel and experience Hungarian culture during their deployment. Day trips were authorized to Pecs, Budapest, Lake Ballentine, and Kaposvar. Our unit had a number of static displays that our soldiers took to different cities and towns for fairs, local celebrations, and historic events. They often spent the day or stayed overnight.

The ISB G5 sponsored many events such as volleyball and basketball tournaments and other sporting events, and the chaplains played a big role in sponsoring religious sightseeing activities. The Morale, Welfare, and Recreation Department also sponsored weekly day trips to porcelain factories, spas, and shopping areas. Our unit sponsored a local orphanage and a school for the hearing impaired, which gave our soldiers an opportunity to help improve the quality of life for some less fortunate kids.

Deployment in support of Operation Joint Guard provided the soldiers of the 503d Maintenance Company a good opportunity to execute tough missions in a real-world environment. Job assignments were rotated among the soldiers every 90 days so they could participate in the different missions of the company. They were challenged to excel and became skilled in new areas. It was an exciting learning experience for everyone involved.

ALOG

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Operation Zipper: Field Expedient HET Uploading

by First Lieutenant Anthony J. Alfidi

During an exercise,
a task force
finds a way to load
tracked vehicles
despite soft, deep sand.

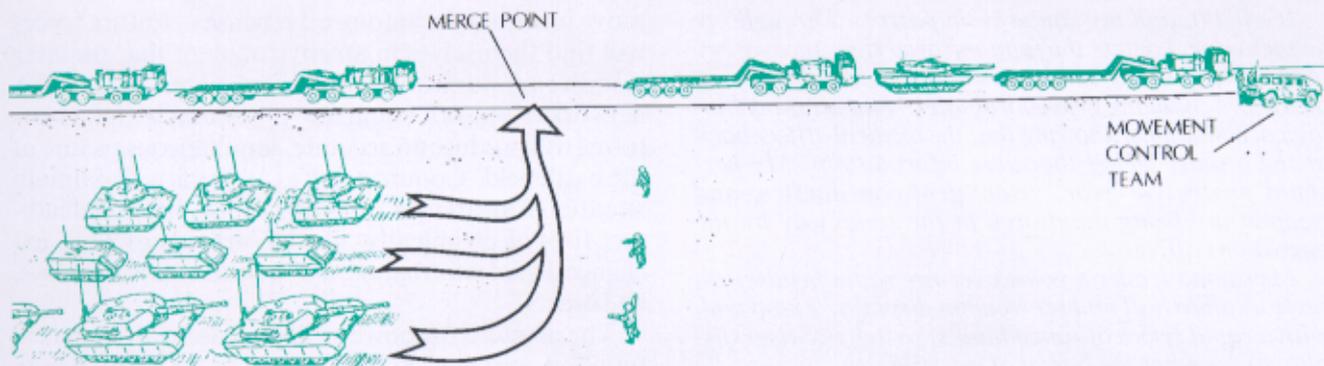
While preparing a pickup point for the tracked vehicles of Task Force 1-7 Cavalry, 1st Cavalry Division, during a 1997 rotation of training exercise Intrinsic Action in Kuwait, the 563d Movement Regulation Team (MRT) encountered a serious problem. When a mix of U.S. Army and Kuwaiti contract heavy equipment transporters (HET's) attempted to maneuver over soft sand deeper than 2 inches, the HET's sank down to their axles and had to be towed out. This eliminated the possibility of setting up a doctrinally correct pickup point for the tracked vehicles that eventually would be uploaded on the trucks. The trucks would have to be loaded after they were on the nearest hard-surfaced road. Loading on the road, however, complicated the MRT's job of matching tracked vehicles to lift assets, since not all the Kuwaiti HET's were M1 Abrams tank capable; in other words, they did not have a lift capacity of at least 60 tons.

The solution proposed by the task force assistant S3 and several troop commanders was to bring the HET's and the tracked vehicles together before they reached the hard-surfaced road. The column of HET's would pass the task force's marshaling area to a point where the MRT noncommissioned officer in charge (NCOIC) would stop them (see illustration at right). The NCOIC would identify the carrying capacity of each HET and signal the cavalry troop commander whose vehicles were being picked up. The cavalry troop commander, who was collocated with the NCOIC, would call forward a matching tracked vehicle. The tracked vehicle then would move forward and onto the road immediately behind its designated HET. When each HET in the column reached a limit of advance (LOA) designated by the MRT, it would stop to allow another tracked vehicle to move into position behind another HET.

When the plan was put into operation, the action of successive tracked vehicles falling in behind each of the HET's resembled the locking teeth of a moving zipper; thus, the process was called "Operation Zipper." Several elements were crucial to the proper functioning of the zipper—

- Coordination at the merge point. Communication between the MRT NCOIC and the troop commander at the point where the tracked vehicles merged with the HET's was crucial. The NCOIC's knowledge of the carrying capacity of each HET enabled him to tell the troop commander which track type could be called forward next.
- Prearrangement of the tracks. The troop com-

1,300 METERS
(NOT TO SCALE)



□ At the merge point, tracked vehicles move in behind the trucks that will transport them.

mander arranged his tracked vehicles by type: M1A1 Abrams tanks in one column, M2 Bradley fighting vehicles in the second, and M113 armored personnel carriers in the third. A platoon leader or platoon sergeant was positioned at the head of each column. This simplified the call-forward process by allowing the troop commander to match a tracked vehicle to a HET with simple, prearranged visual signals.

- MRT at the LOA. Designation of a stopping point for the combined column of HET's and tracked vehicles was a movement control function. For a company-sized element of approximately 31 tracks plus 32 HET's to support their movement (one HET remained empty in case it was needed), a total road distance of about 1,300 meters was required to stage the intermixed column. The MRT was positioned on the road 1,300 meters from the merge point, where the team could stop the first HET in the column.

- Personnel transport. The track crews obviously could not ride in their tracked vehicles after the tracks were chained down on the HET's, so buses for them were provided by the movement control team.

Operation Zipper has some advantages over a standard lift operation. The linear arrangement of vehicles over a 1,300-meter stretch of land presents a more widely dispersed target than a traditional "parking lot" arrangement, so only a small fraction of the vehicles would be lost in an air strike. The zipper is easier to configure than a standard lift, since the HET's do not have to turn or alter their formation.

One disadvantage of the zipper is the difficulty of

command and control for a dispersed line. Without good communications between the merge point and the LOA, safety can be jeopardized. Another disadvantage is the extra time required to complete the operation. Because the entire serial must wait until the last track at the rear of the serial is tied down, an extra 20 to 30 minutes is added to the standard 1-hour load time.

The zipper technique works best when terrain limitations, such as soft sand, dense forest, or steep inclines, prevail. Whenever a HET unit faces such circumstances, the unit commander might ask the supported mechanized unit to "zip up its zipper." **ALOG**

First Lieutenant Anthony J. Alfidi currently is the training officer of the S3 section, 49th Transportation Center, Fort Hood, Texas. He has a bachelor's degree in business administration from the University of Notre Dame and has completed the Transportation Officer Basic Course and the Airborne Course.

Power Sources on the Future Battlefield

by Todd Rice

It's 0300, and my squad is on patrol. Through my helmet visor, I detect the faint infrared signatures of my team. The glowing red letters in my retinal display indicate my changing grid coordinates. I monitor my biological conditions, knowing that the medical officer back at the base is seeing the same information. My personal protective gear, visor, grid coordinates, and weapon are being monitored in the same way by the operations officer.

My squad leader's voice over my radio headset directs us all to halt and set weapon displays. I stop and, with a rapid series of timed blinks, switch my visor display to see what the barrel of my rifle sees.

The squad leader speaks directly to me, "Alpha three, set visual and distance at two o'clock." I enhance my sight picture and make out three distant infrared signatures in a clearing. I take aim at the group and fire an invisible laser beam, which rebounds back to a sensor in my headgear. New grid coordinates instantly appear in my view. "Grid set," I report, and wait as the information is relayed automatically to the base and my squad leader reports to the operations officer. After a few seconds, he calls back to say that the signatures are friendlies—elements of another squad.

We all breathe a little easier and begin moving again. I check my power level; it's low, so I'll need to recharge fully when I get back to the base. I consider shutting down some systems to conserve the power I have left. If I run out completely, I'll have no communication and no firepower. I decide to switch off the thermal system. I may get a little cold, but I'll be fine as long as we keep moving.

While this scenario may be decades away, a higher level of combat effectiveness through technology is in sight now. The military soon will achieve a high level of real-time, detailed information exchange and automated tasking. To be victorious on the future digital battlefield, the Army must have equipment that exploits digital information and uses it to its greatest effect. Units will need higher numbers of man-portable, wireless communication and navigation devices, as well as target acquisition, command and control, and computer systems. The chart at right shows current and projected man-portable digitized systems.

All of these systems will increase the Army's use of batteries and mobile power sources significantly and challenge its ability to store, generate, and manage that power. Advances in power sources will be critical as the Army modernizes and digital technology is used to

move information among all echelons. Future forces will find themselves in an environment that requires instant communications and immediate responses. A network of sensors, command posts, and weapon platforms will produce an accurate, simultaneous picture of the battlefield. Commanders at all levels will maintain situational awareness and synchronize direct and indirect fires electronically, identify friends or foes, exchange digital information, and transmit maps, overlays, and orders.

The demand for power will increase with each new function, and power sources quickly are approaching the limit of what they can provide. The transformation to Information Age warfare will not be possible without major improvements in power sources.

Fueling the Future Force

Electricity is the fuel of the digitized battlefield. Very little will occur on the future battlefield without some type of stored power or power-generation device. Sources of power include generators, batteries, solar devices, and fuel cells. Flywheels, chargers, test equipment, and distribution devices also are included in the term "power sources."

There are three categories of power sources: power generation, power storage, and power management. Power-generation devices, such as mobile generators and fuel cells, create electrical power. Power-storage devices, such as vehicular and communications-electronics (C-E) batteries, amass power created by another device. Power management refers to techniques and devices used to distribute power in a way that reduces consumption and demand. Among these techniques and devices are sleep technology, power-distribution adapters, cables, special charging devices, and test equipment. The three types of power sources interact with each other, and power systems often involve principles of each of them.

The family of tactical quiet generators is being fielded to meet the Army's power-generation requirements. As Force XXI evolves into Army After Next, the efficiency of power-generation devices must be increased, and their weight, noise level, and infrared signatures reduced. They must be capable of supplying sufficient quantities of clean, stable power to the using system without interfering with the soldier's mission. Eventually, power-generation devices will replace power-storage devices completely, because power storage will create an unacceptable logistics burden for the future soldier.

Computer and Radio Subsystem

- Computer
- Soldier radio with †packet relay
- Squad radio
- Global positioning system (GPS) with †integrated navigation
- Handheld flat panel display
- Video capture compatible with combat ID component
- †Color handheld flat panel display
- †System voice control
- †Interface to in-stride mine avoidance

Protective Clothing and Individual Equipment Subsystem

- Advanced load-carrying capability
- Modular body armor
- Chemical and biological garment, glove, and boot
- †Combat ID
- †Personal status monitor
- †Lightweight chemical agent detector

Software Subsystem

- Software
- Government-furnished equipment software



Integrated Helmet Assembly Subsystem (HAS)

- Lightweight helmet with suspension
- Helmet-mounted display (improved display)
- Image intensifier with integrated flat panel display
- Laser detectors
- Chemical and biological mask
- Ballistic and laser eye protection
- †Head orientation sensor
- †Integrated, improved HAS

Weapon Subsystem

- Laser rangefinder
- Digital compass
- Wiring harness and †wireless weapon interface video camera
- Modular weapon system
- Thermal weapon sight
- Close combat optic
- Infrared laser aiming light
- †Integrated sight
- †Objective individual combat weapon

† = Candidates for insertion

Over the past few years, the Army has spent an average of \$75 million a year on batteries, an unacceptable amount. Chief of Staff General Dennis J. Reimer directed a \$33-million reduction in the Army's operations and maintenance budget for batteries in fiscal years 1998 to 2003. He also is challenging combat and materiel developers to reduce overall battery consumption by 50 percent and ensure that new systems use rechargeable batteries or batteries that last at least 5 years. Systems under development must be designed to use rechargeable batteries and to use battery power more efficiently. They may have to use power-conserving software and more energy-efficient circuitry as well.

The Army plans to standardize batteries, maximize the use of rechargeables, improve battery service life, and produce better diagnostic equipment. Effective 1 October, almost all Army units will be required to use rechargeable C-E batteries in garrison, training, and support and stability operations. But in the event of war, units still will use primary (nonrechargeable) batteries, an issue that has raised a number of "train as you fight" arguments at many echelons.

Reducing Power Requirements

The best way to reduce the amount of power used on the battlefield is to reduce the need for it. Producers of power devices must consider power-management techniques in all acquisitions. Existing tactical C-E equipment, such as radios and illumination sets, must reduce power consumption through a combination of technological and procedural improvements. Power distribu-

tion must be improved to take full advantage of the output available from current generators. We also should reduce or eliminate the number of cords and cables needed to distribute power.

Today's need for electrical power on the battlefield is high and continues to grow. Unless sources of power evolve with the systems that use them, they will create a logistics and tactical burden for the soldier. Because new power-consuming systems quickly are becoming an integral part of the way the Army plans to fight, better ways must be found to support power requirements. Initiatives have been started to save money on batteries in the long term and to enable combat and materiel developers to reduce expenses early in a product's life cycle. Power sources must be a consideration in all future materiel and combat developments. As soldiers expect more out of the equipment they use, they must expect more from their power sources.

For more information on power sources, visit the Army Combined Arms Support Command website at http://www.cascom.army.mil/multi/materiel/power_sources_ICT.

ALOG

Todd Rice is a Department of the Army intern at the School of Engineering and Logistics, Texarkana, Texas. After training, he will be assigned to the Army Tank-automotive and Armaments Command, Warren, Michigan. He is graduate of the Quartermaster Officer Basic Course and a lieutenant in the Army National Guard.

MTMC Improves Transportation Support

by Corenthia V. Libby

The Military Traffic Management Command is helping the U.S. Transportation Command meet the challenges of the 21st century.

The Military Traffic Management Command (MTMC) is the Army's subordinate command of the U.S. Transportation Command (USTRANSCOM). MTMC delivers power to U.S. forces anytime, anywhere. When the order is given to units to move out, MTMC's personnel immediately set in motion the complex process that puts the right mix of equipment and supplies in the warfighters' hands.

MTMC accomplishes its mission through four main functions: global traffic management, deployability engineering, integrated transportation systems support, and worldwide port operations. Personnel at MTMC continually update the integrated transportation systems that monitor the movement of all materiel from home stations to ocean ports, to the theater of operations, and back again. At the installation level, MTMC helps soldiers prepare for deployment, using modern automation such as the Transportation Operational Personal Property Standard System for household goods, the Continental United States (CONUS) Freight Management System for moving freight within the States, and the Integrated Booking System for exported cargo and unit deployments.

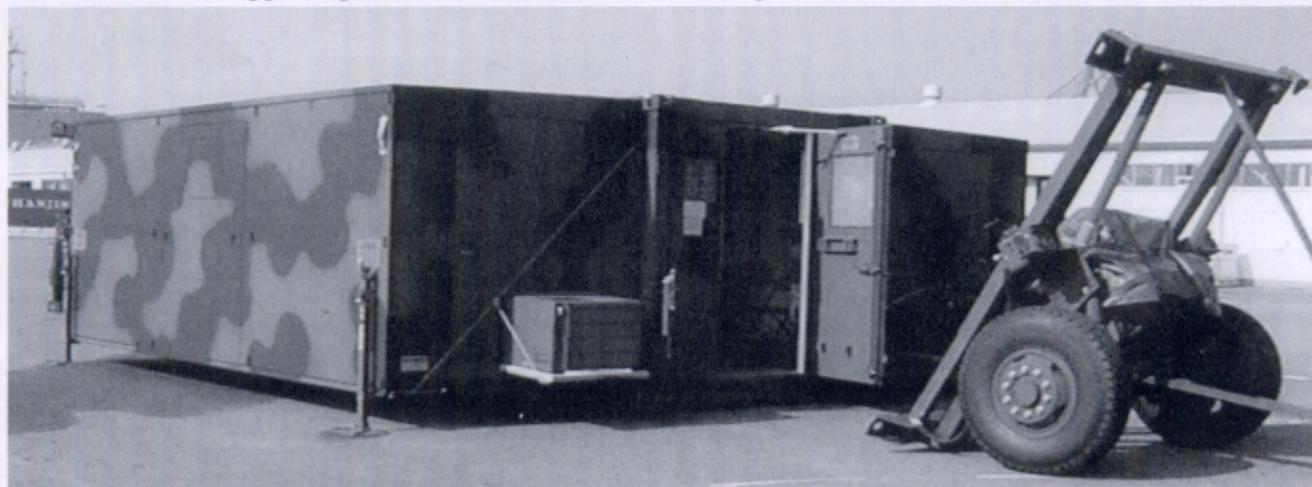
MTMC has several initiatives underway that will help establish its role in supporting three themes that are ad-

dressed in the USTRANSCOM 1998 posture statement: readiness, modernization, and process improvement. By concentrating its efforts on these themes, MTMC hopes to help USTRANSCOM and its subordinate commands meet the challenges of the 21st century.

Deployable Port Operations Center

The ability to deploy rapidly is the key to readiness. MTMC continually looks for ways to improve the deployment process. In support of its single port manager missions, MTMC has developed a deployable port operations center (DPOC) that can be transported to any location in the world on short notice. The DPOC is a command, control, communications, and computer systems configuration that is housed in a portable shelter that can be moved by air, land, or sea. It is highly mobile, self-sustaining, and flexible, and it allows quick response to a variety of tactical scenarios. Its major components are two expandable shelters, a generator, an environmental control unit, a communications package, and a separate storage shelter.

The DPOC supports the Worldwide Port System and the Integrated Computerized Deployment System and interfaces with external systems such as the Global Transportation Network to enhance intransit visibility



□ The deployable port operations center can be transported to any location in the world on short notice.

and command and control. It provides the single port manager, port operator, and supporting staff critical automated tools in a self-sustaining environment. Lessons learned during previous deployments show that adequate facilities, communications, and automatic data processing equipment are vital to accomplishing the port mission.

A prototype DPOC shelter was sent to Korea last December for evaluation. Preliminary findings were incorporated into the first production shelter, which was deployed to Korea to support the Turbo Containerized Ammunition Distribution System (CADS)-98 exercise that began in April. The remaining components of the full DPOC configuration were scheduled for delivery in June.

Paperless Contracting

The Deputy Secretary of Defense, Dr. John J. Hamre, directed the Department of Defense (DOD) to move to a paperless contracting process by 1 January 2000. The Army is acting quickly to leverage modern technology to process procurement actions more effectively and efficiently.

Since the fall of 1996, MTMC's contracting offices have posted sources-sought notices, procurement solicitations, and information on current and future procurement actions on the World Wide Web. The Web permits simultaneous access by all prospective offerors, and makes information available much sooner than traditional distribution through the mail system.

In the pilot initiative to reengineer the DOD personal property program, using the Web greatly simplified the purchase and administration of transportation services. Rather than mailing hard-copy solicitations to interested parties and waiting for them to mail back proposals to evaluate, MTMC developed an automated process that allows interested parties to download a pilot solicitation and bid-proposal software from MTMC's home page. The bid-proposal software gives potential offerors the chance to prepare their offers in a structured manner and submit them to MTMC through the Internet. In turn, MTMC can evaluate the offers more quickly.

MTMC also has developed a state-of-the-art traffic management system, called the Pilot Transportation Operational Personal Property Standard System (PTOPS), to support the initiative to reengineer the personal property system. PTOPS is based on emerging Web technology and consists of five related modules, or units of instruction (counseling, outbound, inbound, contractor, and general), that support the movement of personal property.

"PTOPS makes it easier for the personal property shipping offices, the contractor, and the military customer to communicate, and is conducive to more favorable claims procedures and improved pickup and

delivery times," said Cullen Hutchinson, chief of the MTMC Reengineering Household Goods Division. "When the pilot program is implemented, PTOPS will be available at more than 400 Army, Navy, Air Force, Marine Corps, and Coast Guard sites worldwide."

Reengineered Travel Process

The DOD project management office for the Defense Travel System, which is operated by MTMC, has made a number of significant improvements in procedures for temporary duty (TDY) travel by DOD personnel. As part of the National Performance Review, DOD reengineered TDY travel. This process streamlined the procedures that are used to approve travel and reimburse travelers and simplified the entitlements and statutory requirements associated with normal TDY travel.

"TDY travelers already can take advantage of some of these changes; for example, paper statements of nonavailability and the change in the receipt requirement threshold from \$25 to \$75," said Colonel Albert Arnold, project manager of the Defense Travel System.

The Defense Travel System eventually will be seamless and paperless to the maximum extent possible. There will be a Government segment that encompasses functions such as initiating travel requests, authorizing travel, disbursing funds, and managing travel. A commercial segment will integrate commercial travel office services and have a common user interface that automates the travel services being provided.

Another change in DOD travel gives program supervisors and line managers the authority to approve travel and fund expenditure. This change will ensure that those who are responsible for mission accomplishment have the ability to make choices and use their resources wisely. What all this means for travelers is an improved, faster process and a "one-stop-shopping" concept.

"It takes vision, competence, courage, and good leadership to prepare fully for the challenges of the next century," said Colonel Larry Curtin, MTMC's deputy chief of staff for operations. "By concentrating on readiness, modernization, and process improvement, MTMC will continue to provide efficient logistics support to DOD's warfighting commanders during peace and war and in peacekeeping and humanitarian relief efforts around the world."

ALOG

Corenthia V. Libby served as a public affairs specialist at the Military Traffic Management Command for 6 years. She recently transferred to Headquarters, U.S. Army, Europe, in Heidelberg, Germany. She is a graduate of George Mason University, the Army Management Staff College, the Army's Advanced Public Affairs Course, and the Defense Information School.

From Santiago to Manila: Spanish-American War Logistics

One hundred years ago, the United States defeated Spain and assumed the status of a great power. The Army was unprepared, but the performance of its logisticians was Herculean.

“A splendid little war!” That was how John Hay, the ambassador to Great Britain, described the Spanish-American War of 1898. Although his comment might sound a little jingoistic a century later, he was simply reflecting the sentiments of most of his fellow Americans, who felt that the war with Spain was fully justified and who basked in the glow of a victory easily, quickly, and decisively attained.

Historians tend to look back on the Spanish-American War as something of a coming-out party for the United States. After spending most of the 19th century dealing with internal challenges—civil war, westward expansion, urbanization, industrialization—the United States was ready to make its grand entrance upon the international stage as a major power. The war with Spain was a demonstration of emerging American industrial and military strength. It also created something new in the American experience, an overseas colonial empire, as the United States acquired Guam, the Philippines, and Puerto Rico. (Hawaii was annexed that year in an action unrelated to the war but very much in its expansionist spirit.)

“Remember the Maine!”

The war had its roots in the Cuban struggle for independence from Spain. The Cuban Revolution that began in February 1895 was viewed with great sympathy by most Americans. That sympathy turned to outrage when the Spanish Governor-General of Cuba, General Valeriano de Weyler y Nicolau, attempted to crush the rebellion by herding thousands of Cubans into concentration camps; the terrible conditions in those camps led to an estimated 400,000 deaths. American popular resentment was whipped up by the press, particularly the *New York Journal* of William Randolph Hearst and the *New York World* of Joseph Pulitzer, which used ever more sensational coverage of the Cuban situation to gain readers in their escalating circulation war.

To show American concern as the situation in Cuba deteriorated, and to protect American citizens and property there, President William McKinley sent the battleship *Maine* to Havana, the Cuban capital, early in 1898.

But this “friendly” visit ironically turned into the catalyst for war: on the evening of 15 February, as it rested at anchor in Havana harbor, the *Maine* blew up with the loss of 260 American lives. A naval court of inquiry concluded that the explosion was caused by a submerged mine, though it could not determine who placed the device. [The cause of the *Maine* explosion has continued to be a matter of controversy. It might have been caused by an accidental coal bunker fire aboard the ship.] But by the time of the court’s report, the American public had already reached its conclusion: Spain was guilty. Outrage over the *Maine*, coupled with outrage over Spanish conduct in Cuba and sympathy for Cuban independence, made the pressure for war irresistible.

On 20 April, President McKinley signed a congressional resolution that demanded that Spain “relinquish its authority and government in the island of Cuba” and directed the President to use the Army and Navy “to carry these resolutions into effect.” On 22 April, the Navy’s North Atlantic Squadron, under the command of Rear Admiral William T. Sampson, began a naval blockade of Cuba. War was a reality.

Conditions on the Eve of War

The United States that entered the war had matured into an industrial colossus during the second half of the 19th century. For example, by 1890 the United States had passed Great Britain, the world’s leading industrial power for over a century, in production of pig iron and steel. Then, during the short period from 1890 to 1898, U.S. steel production doubled. During the 1890’s, the United States also overtook Britain—again the world leader—in coal production. American industrial prowess meant that production shortfalls would not be a factor in the war with Spain. Indeed, the Spanish-American War foreshadowed 20th century wars by demonstrating the increasing importance of industry to successful military mobilization.

Unfortunately, while American industry surged, the Army was stagnant. Its basic organization had remained fundamentally unchanged since the reforms instituted after the War of 1812. Authority in the Department of

War was divided among the Secretary of War (in 1898, Russell A. Alger), the commanding general of the Army (Nelson A. Miles), and the heads of the staff bureaus (such as the Ordnance and Quartermaster Departments). The commanding general was responsible for training, discipline, and military control of armies in the field, but he had no authority over the bureaus. The Secretary of War had to act as a chief of staff over the bureaus, which tended to operate as independent fiefdoms.

The Army was ill-prepared for the rapid expansion of both men and materiel needed to wage war. The Regular Army on the eve of the war had only 28,183 soldiers (2,143 officers and 26,040 enlisted men) on duty. It was a force largely designed for, and accustomed to, fighting Indians in the West. The Army had little in the way of reserve supplies to meet the greater requirements of a foreign war, and it was not permitted to contract for more materiel until war was declared.

The expansion of this small Army was complicated by the very cautious approach to war preparations McKinley and Alger followed until there was an actual declaration of war. As war fever grew, Congress did appropriate \$50 million on 9 March for "national defense," but McKinley would use it only for improving coastal defenses and fortifications, not to prepare for offensive operations. (This policy did allow the Ordnance, Engineer, and Signal Departments to expand their activities.) After the war started, Congress appropriated \$244.4 million for the Army by the end of 1898, in addition to the regular fiscal year 1898 appropriation of \$62.5 million.

A Two-Theater War

Even before war was declared, it was obvious that Cuba would be the main strategic objective. However, Commodore George Dewey's unexpected demolition of a Spanish fleet in Manila Bay on 1 May determined that the Philippine Islands would become a second theater of operations for the Army. After the quick American triumph in Cuba, a third campaign would be mounted to seize Puerto Rico.

Miles recommended that the Army expand to 162,600 soldiers (regulars and volunteers). But once war was declared, there was an enthusiastic rush of men to enlist. The President called for 125,000 volunteers on 23 April and another 75,000 on 25 May, and both quotas were quickly filled. By the end of May, 163,626 enlisted men had been mustered into service. By the end of the war in August, the Army had 274,717 soldiers on duty, including 58,688 in the Regular Army and 216,029 volunteers. The Army actually overmobilized: less than one-fifth of those soldiers saw action.

The surge of men into service outstripped the Army's ability to equip them. Except for rifles, supplies on hand were inadequate to support the expanded Regular Army,

let alone the huge number of volunteers. Determining logistics requirements was complicated by the lack of well-developed operational plans. Without a general staff, the Army had not developed plans for invading Cuba. After war was declared, plans seemed to change almost daily. The expeditionary force for Cuba originally was to be 5,000 men, then 12,000, and finally 25,000. Miles wanted to delay an invasion of Cuba until fall, when the yellow fever season would be over and the recruits would be better trained; the Navy wanted an immediate invasion, to beat the hurricane season, and their view prevailed with the President. The force originally was bound for Havana; then its destination was changed to Santiago, on Cuba's southeast coast, after the Spanish naval squadron of Admiral Pascual Cervera y Topete was found there. (The Navy's uncertainty about the whereabouts of Cervera's squadron, which had left the Cape Verde Islands on 29 April bound for the Caribbean, greatly complicated operational planning for both the Army and the Navy.)

Bottleneck at Tampa

Tampa, on the Gulf coast of Florida, was chosen as the point of concentration for the Cuba expeditionary force. It proved to be a poor choice, particularly as the force grew and its destination changed from Havana to Santiago. Tampa lacked adequate facilities and equipment for unloading and storing the incoming materiel, but its biggest drawback was its lack of rail capacity. The city was served by only two railroad lines, both single track: the Florida Central and Peninsular and the Plant. Only the Plant line ran on to the port, 9 miles from the city. The flood of men and materiel into Tampa quickly overwhelmed the available facilities and created monumental congestion. Within weeks, railcars were backed up on sidings as far north as Columbia, South Carolina.

As Secretary Alger observed, "Unquestionably, Tampa was not adapted to the concentration and the effective handling of the vast quantities of supplies necessary for an army of 25,000 men." When Miles arrived in Tampa on 1 June, he reached the same conclusion—

I found that place crowded with an indiscriminate accumulation of supplies and war material. The confusion . . . appeared . . . to be utterly inextricable. The [rail] sidings from the port of Tampa for perhaps fifty miles into the interior were blocked with cars, and the resulting difficulties of the situation prevented proper embarkation of the troops.

The problems at Tampa were vivid evidence of the biggest logistics challenge of the war: transportation and distribution, not production. Between 18 May and 31

August, the depot at Tampa handled 13,239 carloads of supplies and equipment, as well as railcars transporting 66,000 soldiers (with baggage) and over 15,000 animals.

The Cuba Campaign

The order to load the troops assembled at Tampa on the transports came on 5 June. Within 40 hours, some 17,000 soldiers had moved to the port. The congestion and confusion of the camps were extended to the port, mainly because there was only one long pier for loading the men. Boarding soldiers anxious not to be left behind jostled for space on the transports. Theodore Roosevelt, the future President and an officer of the soon-to-be-famous Rough Riders volunteer regiment, described the loading as a "higglety-pigglety business."

After one abortive departure, the expedition finally left for Santiago on 14 June. On board were 819 officers, 15,058 enlisted soldiers, 30 civilian clerks, 272 teamsters and packers, 107 stevedores, 2,295 horses and mules, 114 six-mule wagons, 81 escort wagons, 7 ambulances, 16 light field guns, four 7-inch howitzers, four 5-inch siege guns, 1 Hotchkiss revolving canon, 1 pneumatic dynamite gun, eight 3.6-inch field mortars, and 4 Gatling machineguns.

After the transports arrived off Santiago on 22 June, the commander, Major General William R. Shafter, decided to land at Daiquiri, 15 miles east of the city. When the initial landings were made, Shafter sent troops to occupy nearby Siboney. Siboney then became the main theater logistics base.

The Spanish had about 13,000 men to defend Santiago. After chasing the enemy out of Las Guasimas, 3 miles toward Santiago, Shafter paused to bring up supplies and newly arrived troops from Siboney. He then ordered a two-pronged attack on the Spanish defensive positions at El Caney and the San Juan Heights for 1 July. Both objectives were gained after fierce fighting; the taking of the San Juan Heights was highlighted by the famous charge up San Juan Hill led by the Rough Riders, under Theodore Roosevelt, and the African-American 10th Cavalry Regiment. Following these battles, the Spanish retreated into the defenses of Santiago. The siege of Santiago involved more negotiation over surrender terms than bombardment, particularly after Cervera's fleet attempted to fight its way out of Santiago harbor and was destroyed by Sampson's squadron on 3 July. The Spanish defenders finally surrendered the city on 17 July.

The Philippines and Puerto Rico Campaigns

The U.S. triumph in Cuba decided the outcome of the war. The Spanish felt that they had defended their honor and saw no reason for continuing the fight after the fall of Santiago. Diplomatic contacts (made through the French Ambassador to the United States) led to the

signing of a peace protocol in Washington on 12 August and the beginning of formal negotiations on a peace treaty. (The Treaty of Paris was signed on 10 December.) The peace protocol cut short the Philippines and Puerto Rico campaigns.

Three troop contingents were sent from San Francisco to the Philippines to capture Manila: 2,500 men on 25 May; 3,500 on 15 June; and 4,800 on 27 to 29 June. Managing the men and materiel converging on San Francisco was a smoother process than at Tampa. The numbers involved were smaller, but San Francisco also was a better embarkation site: it had better rail connections and harbor facilities. The San Francisco depot was able to expand quickly to accommodate over 30,000 soldiers. The only serious problem was obtaining enough transports to carry the Army to the Philippines, and the Quartermaster Department solved that by procuring (mostly by charter, in a few cases by purchase) all available vessels on the Pacific coast.

The first contingent arrived in Manila Bay on 30 June and went ashore at Cavite, south of Manila, the next day. The second and third contingents landed at Tambo, closer to Manila, and set up the expedition's main base, Camp Dewey, 3 miles from the city's southern suburbs. By the time the third contingent arrived at the end of July, the U.S. force consisted of 470 officers and 10,464 enlisted men under the command of Major General Wesley Merritt.

The 13,000 Spanish defenders of Manila faced more than Merritt's troops: they also were besieged by over 20,000 Filipinos under Emilio Aguinaldo who were fighting for independence. After a brief battle on 13 August, the Spanish surrendered the city the following day; on 16 August, news arrived that the war was over.

The Puerto Rico campaign was launched after the surrender of Santiago in hopes of forcing Spain to sue for peace and thereby eliminate the need for a campaign against Havana. The expedition was commanded by Miles, who left Guantanamo, Cuba, on 21 July with 3,415 soldiers on 9 transports. They landed at Guanica, on Puerto Rico's southwest coast, on 25 July. Miles had formed an elaborate plan: capture Ponce, Puerto Rico's second largest city, on the south coast; then send three columns of troops north from Ponce to drive the Spanish back into the defenses of San Juan, Puerto Rico's capital; and conclude by laying siege to San Juan. Ponce was occupied on 27 July, but before much more of the plan could be executed, the war came to an end.

Subsistence

Subsistence supply in the Spanish-American War was largely a success in terms of quantity, though there were field distribution problems in Cuba. More serious were the quality problems, which were caused by lack of planning for feeding soldiers in the tropics.

The Commissary General of Subsistence, Brigadier General Charles P. Eagan, established a subsistence depot at or near each major camp where regulars and enlistees congregated before moving to Tampa or San Francisco. The existing purchasing and depot commissaries at New York, Baltimore, Chicago, St. Louis, Kansas City, New Orleans, and San Francisco bought and shipped to the camp depots enough rations to meet current demands and maintain a 60 days' supply.

The Subsistence Department was so successful in procuring rations that it created a problem of over-supply, which resulted in a great deal of spoilage. Regulars moving to the camps at first carried 30 days of rations, but that practice was ended in late May because too much food was accumulating. Six to seven million rations were shipped to Tampa, which added to the storage problems there. But the troops in the camps never lacked for food.

While the accumulation of rations was impressive, the Army had given little thought to changing its standard rations to meet tropical conditions. The field ration included bacon; hard bread; coffee and sugar; beans, rice, or hominy; and, if possible, potatoes, onions, and canned tomatoes. The travel ration provided hard bread, canned fresh or corned beef, canned baked beans, and coffee and sugar.

The canned beef was meant to be cooked in a stew; otherwise, it was stringy and tasteless. The Subsistence Department did not intend for canned beef to be the main staple of the troops in the field or to be consumed cold. Unfortunately, soldiers traveling to Cuba subsisted largely on cold, uncooked canned beef from their travel rations because the transports had no cooking facilities. Canned beef then was added to the field ration in Cuba and dominated the diet of the troops there, leading to much grumbling.

A commissary depot was established at the main supply base at Siboney. To expedite issue of food, regimental commissaries were allowed to draw rations without submitting requisitions. Lack of transportation hindered distribution of rations to the front, where accumulations were limited to 1 day of supply. Some soldiers contributed to food shortages in the field by throwing away the 3 days of rations they carried in order to lighten their packs in the heat.

Soldiers going to the Philippines and Puerto Rico were more fortunate. Those expeditions had transports equipped with refrigeration equipment, so the troops had fresh meat. Once the troops arrived in the Philippines, a contract was awarded to obtain refrigerated meat and fresh vegetables from Australia.

Clothing and Tents

The rapid expansion of clothing procurement demonstrated the power of American industry. The War

Department had purchased no shirts or pants during the period from 1 July 1897 to 30 April 1898. It then procured 500,000 shirts and 500,000 pairs of pants between 1 May and 15 August. At one point, 100,000 uniforms were manufactured in only 2 weeks. Shoes were a similar story. After buying only 27,950 pairs in the preceding year, the War Department acquired 782,303 in the same 3½ months. When the war ended, the Army was left with a considerable surplus of clothing.

Most of the clothing was purchased, but a fair quantity was manufactured at the depots at Philadelphia, San Francisco, and Jeffersonville, Indiana. The Philadelphia depot, by far the largest, still used the system that had been in effect for a hundred years: the depot cut garments and provided them to contract seamstresses, who returned the finished products to the depot. The number of seamstresses employed by the depot increased from 1,100 to well over 4,000 during the war.

Two problems did hinder the clothing effort. When the war began, the regulars took the field in the traditional blue wool uniforms, which were heavy and uncomfortably hot for the tropics. Unfortunately, the short length of the war did not permit the Army to make major changes in clothing design. There were some minor adjustments, such as issue of lighter underwear, and some canvas uniforms were issued, but they proved to be as hot as the wool suits. The troops bound for the Philippines, with fewer numbers and more time to prepare, fared better than those going to Cuba: they received lightweight clothing, including a white drill suit, in addition to their wool uniforms.

There also were problems in distributing clothing. Transportation bottlenecks, most notably at Tampa, delayed delivery of uniforms to volunteers assembling at the camps. Provision of canvas suits to soldiers in Cuba was hindered by lack of transportation inland to the front; as a result, the suits sat onboard transports and were not delivered until after the surrender of Santiago.

Demand for tents exceeded projections, mainly because the large number of sick soldiers meant more tents were needed for field hospitals. The Philadelphia depot fabricated 199,000 tents, while the War Department bought another 172,000.

Wagons and Animals

With motorized transportation still very much a novelty, the Army relied on wagons and animals (both draft and pack) to move materiel. However, no wagons had been acquired in the 9 months before the war. As of 1 April, the Regular Army had an inventory of 500 four-mule wagons, 592 six-mule wagons, 96 Red Cross ambulances, 6,701 horses (6,120 of which belonged to cavalry units), and 2,021 mules.

The Quartermaster Department estimated that it needed 5,000 wagons for the war. The Army actually

bought 4,620 wagons, though not all were delivered before the hostilities stopped and relatively few reached the theaters of operations. Wagon manufacturing companies did not have time to make wagons to meet the Army's specifications, so most of the wagons procured were four-mule farm wagons. The Army also purchased 16,618 horses and 20,182 mules during the war and distributed over 90 percent of them to units. The procurement of animals outpaced that of wagons.

The shortage of wagons during the war's initial stages hampered distribution of supplies at the camps. By mid-May, there were 1,000 railcars loaded with supplies on sidings in and around Tampa, but the Army had only 17 wagons to unload them. Fifty railcars were arriving every day, but only two or three could be unloaded because of the wagon shortage.

Lack of wagons also caused distribution problems in the theaters. The poor roads and trails in Cuba—often hilly, muddy, and overgrown with vegetation—made using wagons problematical and hindered movement of supplies to the front. The roads and trails also reduced the capacity of the mules: animals that normally could carry 250 pounds could manage only 100 pounds in Cuba. Sickness among teamsters and packers exacerbated distribution problems. Soldiers often could substitute for teamsters; skilled packers, however, were harder to replace, with the result that pack trains were sometimes delayed.

The expeditions to the Philippines were fairly well equipped with wagons and animals. However, the demand in the theater still exceeded the supply. The theater quartermaster rented two-wheeled carts pulled by ponies and carabao (water buffalo) on the local market and supplemented them by hiring Chinese and Filipino coolies to move supplies.

Ocean Transportation

The Spanish-American War was the first U.S. war to be fought overseas. Ocean transportation therefore was critical to reaching the fight. Unfortunately, no one in the Army was experienced in large overseas movements. The Army's only previous large-scale ocean movement had been 51 years earlier, during the Mexican War. (See the article "Pack Mules and Surf Boats: Logistics in the Mexican War," in the November-December 1997 issue of *Army Logistician*.)

Even before war was declared, the Quartermaster General, Brigadier General Marshall I. Ludington, began investigating the availability of commercial vessels that could be chartered as transports. Congress was opposed to granting U.S. registry to foreign vessels, so for the Cuba expedition the Army was limited to char-

tering U.S. vessels involved in the Atlantic and Gulf coastal trade. By 1 July, the Quartermaster Department had chartered 43 transports, 4 water boats, 3 steam lighters, 2 ocean tugs, and 3 decked barges for Cuba; another 14 transports were chartered on the Pacific coast for the Philippines expeditions. More were chartered in July and August. When enough vessels could not be chartered, the Army purchased 14 steamships and quickly outfitted them to carry troops to Cuba and Puerto Rico.

By the time the Cuban expedition sailed from Tampa on 14 June, it was loaded aboard 38 vessels and accompanied by Navy ships. However, poor estimates of carrying capacity meant that the transports could move only about 17,000 soldiers, not the 25,000 originally planned. The transports also were fitted out to house soldiers for the short run from Tampa to Havana, the original destination, not for the longer voyage to Santiago. As a result, conditions on board were cramped, uncomfortable, and unsanitary, and the lack of cooking facilities led to the unfortunate overreliance on canned beef.

Unloading the troops at Daiquiri was a fairly smooth operation. The Navy landed some men, but most came ashore on small boats (the transports' lifeboats) that they manned themselves. By contrast, landing supplies was a slow and laborious operation, mainly because there was only one small dock at Daiquiri and because only one of the expedition's lighters had reached Cuba. To relieve unloading problems in Cuba, the Army contracted with a New York firm to send workers to Cuba to build lighters, barges, and docks, as well as repair railroads and engines. These workers arrived on 23 July, after the surrender of Santiago, but they were sent on to Puerto Rico to support the expedition there.

The transports bound for the Philippines were better fitted for a long voyage than those going to Cuba. The accommodations generally were more comfortable, and, most importantly, there were galleys for cooking. However, there were unloading problems in the Philippines and problems moving supplies between the two bases, Camp Dewey and Cavite. Many men and supplies went ashore on *casco*—the native lighter of the Philippines—towed by captured Spanish tugs or Navy launches; each *casco* could carry 200 men with tents, packs, and 10 days of rations.

Ordnance

The biggest ordnance challenge facing the Army was equipping the volunteers. But that raised an important question: should they receive the Danish-designed Krag-Jorgensen magazine rifle, which the Army had adopted in 1894 and with which the Regular Army was equipped; or should they receive the .45-caliber, single-shot, black

powder Springfield rifle adopted in 1873 and used by the National Guard? Because there was a large supply of Springfields on hand and expanding production of Krags would take time, it was decided to issue Springfields to the volunteers. Production of Krags was increased, but of the 26,728 turned out between 1 April and 1 September, fewer than 1,000 were issued. Ammunition supply was a success. Ammunition was a priority for the pack trains in Cuba, so the troops at the front generally had a plentiful supply.

Aftermath

Although Americans rejoiced in their impressive triumph, the Army's performance didn't escape criticism. Much of the controversy resulted from the large number of deaths caused by disease. While only 369 soldiers died of battle-related causes, 2,565 had died of disease by the end of September. Typhoid fever was a problem in the U.S. camps, which were not always sanitary. And despite Shafter's best efforts to hurry his campaign and extract his force from Cuba before the fever season, cases of yellow fever began to show up in his camps during the siege of Santiago. After the surrender, the War Department began shipping soldiers to Montauk Point, New York, to recuperate. Within 3 weeks, some 22,000 soldiers had been moved to Montauk, and half of them were suffering from diseases contracted in Cuba.

The high level of sickness among soldiers in Cuba was aggravated by shortages of medical supplies. Many medical supplies were packed at the bottom of the transports and were unloaded last. Transportation and distribution problems in the theater further delayed movement of medical supplies to the front.

To investigate these and other problems, McKinley appointed a special commission headed by railroad owner Grenville Dodge. The Dodge Commission concluded that there had been no corruption or intentional neglect of duty in the administration of the Nation's war effort, but that the management of the Army needed improvement. While praising the "herculean effort" of the Quartermaster Department in accomplishing so much so quickly, it criticized the lack of organization in supplying the camps, the failure to prevent congestion at Tampa, and the lack of planning for a fleet of transports. These shortcomings were attributed to a lack of trained officers and a general lack of preparedness. Ironically, the Army had emphasized manpower mobilization, which produced more troops than were needed, at the expense of materiel mobilization. The result was a catch-up logistics effort that succeeded in spite of much confusion, waste, and inefficiency in distribution.

Significant reform did come to the Army in the next few years, primarily through the efforts of Secretary of War Elihu Root, who served from 1899 to 1904. A general staff was created; the commanding general of the Army was replaced with a chief of staff; the system of permanent tenure in the staff departments (a prime source of entrenched bureaucracy in logistics) was replaced with a system of 4-year details; and the Army War College was established. The result of these reforms was an increase in the professional capabilities of the Army.

While reforms clearly were needed, the logistics performance in the Spanish-American War had been credible in view of the lack of preparedness and the lack of planning for an overseas, tropical war. As Army historian James Huston concluded, "Given the existing situation, it may be . . . said that the War Department in many ways did a remarkable job of meeting the enormous task suddenly thrust upon it." It is interesting to note that in the year after the war, the Army efficiently outfitted a force four times larger than Shafter's and moved it to the Philippines without significant problems.

And while the integration of the armed forces was 50 years in the future, the Spanish-American War did offer a glimpse of the Army to come, as then-Lieutenant John J. Pershing observed—

White regiments, black regiments, regulars and Rough Riders, representing the young manhood of the North and the South, fought shoulder to shoulder, unmindful of race or color, unmindful of whether commanded by an ex-Confederate or not, and mindful only of their common duty as Americans.

—Story by Robert D. Paulus

One Force Logistics Training

by Keith Mostofi

Four National Guard units receive overseas deployment training while helping Combat Equipment Battalion North in Europe execute a multiyear project to redistribute Army pre-positioned stocks.

The Chief of Staff of the Army's "One Force" concept is a key element in ensuring that the Army can fight and win future conflicts. This is especially true when it comes to providing logistics support to the warfighter. All components—Active Army, Army National Guard, Army Reserve, and the civilian work force (both Army employees and contractors)—must function as a cohesive whole. This is necessary, in part, because many of the specialized logistics skills the Army needs are available only, or largely, in the reserve components or the civilian work force.

To make the concepts of "One Force" and "Total Army" a living reality, we must dispel the notion that they are empty slogans. Effective training and cooperation among the Army's components often are marred by political and organizational factors that serve to increase tension and competition. This problem has grown as a result of competition for missions and resources in an Army that is rapidly evolving to confront new international realities. The challenge for the Army's logistics leaders is to develop a methodology for effective joint training and cooperation to meet the changing environment.



□ A soldier from the 3654th Direct Support Maintenance Company, Iowa Army National Guard, puts a new power connector in a radio's power amplifier.



□ Soldiers from the 3654th Direct Support Maintenance Company sandblast alternator parts before installation.

That was the challenge confronting Combat Equipment Battalion North (CEBN), an element of the Army War Reserve Support Command's Combat Equipment Group-Europe (CEG-E), when it received word in the summer of 1996 that it would host 4 National Guard units—some 400 citizen soldiers in all—for overseas deployment training (ODT) the following summer. CEBN's success in meeting this challenge shows that, if the training rotation is carefully planned and executed by both parties, effective joint training can provide benefits to the reserve component unit being trained and the Active Army component unit providing that training.

Planning Challenges

The four National Guard units were a diverse mix: the 945th Collection and Classification Company, from Delaware; the 3664th Direct Support Maintenance Company, from West Virginia; the 3654th Direct Support Maintenance Company, from Iowa; and Company B, 340th Forward Support Battalion, from California.

The challenges facing CEBN in preparing to receive, support, and train these units appeared daunting. For one thing, it had been a number of years since reservists last trained with the battalion. And despite their names, the battalion's two subordinate combat equipment com-

panies (CEC's), the 16th CEC and the 23d CEC, are small, mostly civilian TDA (table of distribution and allowances) organizations. They operate storage sites for Army pre-positioned stocks at Zutendaal, Belgium, and Bettembourg and Sanem, Luxembourg, respectively.

The first and most obvious obstacle to supporting the National Guard units was providing life support. CEBN's sites are essentially production and storage facilities, with no barracks and very limited morale, welfare, and recreation (MWR) facilities. They also are located at remote sites, away from major U.S. troop concentrations in Europe, and they are widely separated from each other.

Another obstacle was political and diplomatic. Assuming that the practical difficulties in feeding and housing a large number of "transients" could be overcome, what would be the reaction of the local national work force to the arrival of the National Guard units? Both CEC sites had been affected by the drawdown of U.S. forces in Europe, and there had been considerable turmoil as some Belgian and Luxembourgian employees were separated. Would the Belgian and Luxembourgian Governments object—as had happened elsewhere—to the National Guard "stealing" work from their nationals?

About the only things that did not seem to be ob-



□ Soldiers from the 945th Collection and Classification Company, Delaware Army National Guard, inventory Bailey bridge parts.

stacles were finding missions for the ODT units to perform and adequate facilities in which to train. The CEBN was in the midst of supporting an ambitious, multiyear program to reconstitute and redistribute European-based Army pre-positioned stocks to other stockpiles worldwide. There was more than enough real-life work to provide challenging training opportunities. Adequate production facilities and equipment were not a problem: the CEC sites are large, modern, well-equipped facilities constructed to a high standard by NATO in the late 1970's and early 1980's. The 23d CEC site at Bettembourg, Luxembourg, includes the Luxembourg Maintenance Center, which had been constructed specifically to support surge requirements.

Coordinating for Success

CEBN met the challenge by applying the tried and true principles of deliberate, iterative planning: identify the issues, develop and execute solutions, and keep up the process through successive levels of detail until all the bases are covered and there is very little chance of Murphy's Law coming into play. The planning effort remained focused in the operations cells of the battalion and the CEC's, but it rapidly expanded to include all organizations that would be involved in executing the mission. These organizations, which would have to supplement CEBN's capabilities, came into the effort enthusiastically. To name just a few, the key players included the CEG-E S2/3, which ran interference for resourcing and support at the command level; the 80th Area Support Group and its subordinate 254th Base

Support Battalion, which coordinated life support (including the required contracts) over a widely dispersed area; the 310th Theater Support Command (Provisional), an Army Reserve unit, which agreed to conduct unit evaluations under the Training Assessment Model; and the Luxembourg Army.

The Luxembourg Army, a tiny, all-volunteer, but highly professional force, eagerly took on the mission, despite a full plate of support demands ranging from the Luxembourg Stabilization Force contingent in Bosnia-Herzegovina to Luxembourg's term in the European Union Presidency. They agreed to set up and operate a tent city at the Bettembourg site and provide food service (supplemented as needed by U.S. Army unit personnel). "It's always a delight to support our American allies," observed Colonel Michel Gretsche, the Luxembourg Army commander, "but deployments like this benefit our soldiers also. It provides them excellent training for what will be one of our missions in the event of a NATO contingency—receiving and supporting deploying allied forces."

CEBN and the ODT units quickly established effective communication. The ODT units brought tremendous enthusiasm and unit pride into their part of the planning effort. The 945th Collection and Classification Company went so far as to "borrow" two bridging experts from the Virginia Army National Guard when it learned that its mission would be assembling and classifying Bailey bridges and other bridging stocks at Zutendaal.

By Christmas 1996, representatives of all four units

had visited CEBN. The next step was to identify the training mission requirements in detail, which the two CEC's proceeded to do over the next several months. Their efforts enabled each unit to know the specific tasks, conditions, and standards expected of it before it arrived; in effect, there would be a work requirements contract between CEBN and the National Guard units.

Work requirements were consciously formulated to stretch unit capabilities and maximize training benefits while providing the CEC's with an optimal payoff in terms of increased materiel readiness of the Army prepositioned stockpile. The CEC's would have the job packets, parts, and specialized tools ready for the arriving units. The units would work 6-day weeks, 10 to 12 hours a day, with only 1 day off for some sort of MWR tour or other unit event. In other words, it would be no summer vacation in Europe. Work would be produced to the exacting CEG-E quality standards and inspected by CEC personnel.

The work requirements were forwarded to each ODT unit for review. Representatives from each CEC then traveled to their ODT units and finalized the training mission and specific support requirements in face-to-face meetings with the units' leaders.

Another area of planning that received considerable emphasis was public information. Great effort was dedi-

cated to planning how to deliver information on what the units were doing and the importance of their training to U.S. and host-nation decision makers, both civilian and military, and to the general public in the surrounding area. Publicity also would help to defuse any latent local suspicion or resentment (always a concern, even in countries as traditionally pro-American as Belgium and Luxembourg).

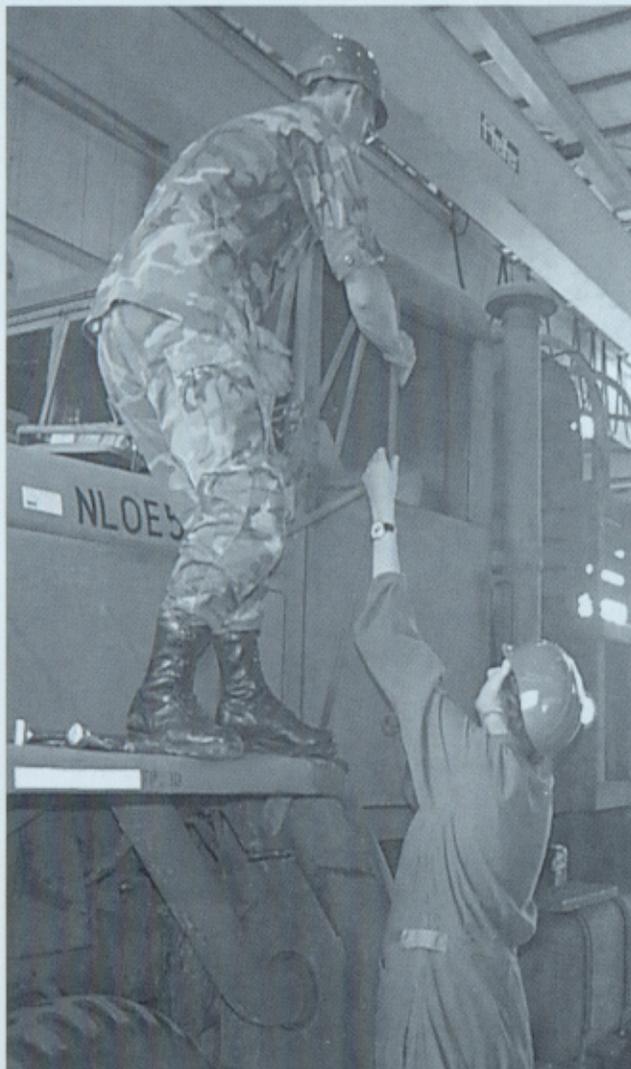
Even more important, CEBN planners realized that publicity would be an important boost to the morale of the ODT units and the individual citizen-soldiers who were taking time out from their regular lives to deploy to work in Europe during what should have been their summer vacations. Working closely with the public affairs elements at both CEG-E and the Army Industrial Operations Command (the Army War Reserve Support Command's higher headquarters), CEBN prepared news releases, scheduled visits by the U.S. ambassadors to Belgium and Luxembourg and important local officials, and planned media days to ensure maximum publicity for the mission.

The Effort Pays Off

Gradually, all of the details were sorted out in monthly in-process reviews. By the time the first unit, a 33-person detachment from the 945th Collection and



□ The generator maintenance team from Company B, 340th Forward Support Battalion, California Army National Guard, inspects PU6 10-kilowatt generators.



□ Soldiers from the 3664th Direct Support Maintenance Company, West Virginia Army National Guard, replace the side mirror on a truck.

Classification Company, arrived at Zutendaal to work on Bailey bridges, almost everything had fallen into place. The unit was literally able to “hit the ground running” and start training and production work as soon as the jet lag wore off. That situation continued through all four ODT rotations—a real testimony to “good luck” born out of painstaking preparation and diligent execution.

There were some problems, of course. Unit toolboxes, forwarded by air freight well ahead of the soldier deployments, got delayed en route or had to be rescued from airport customs cages after the units arrived. Because of problems with military air, one unit arrived in country without confirmed return transportation to the U.S. More importantly, each unit had problems in adjusting to the process for ensuring that CEG-E’s very strict quality standards were met.

But all of the problems were minor and quickly overcome. The 80th Area Support Group, the 254th Base Support Battalion, and the Luxembourg Army did a superb job of providing life support. The Luxembourg Army’s cooks consistently applied their considerable culinary skills to making evening meals at the Bettembourg tent city a wonderful contrast to the meals, ready to eat, the units got at lunchtime. The host nation work forces, far from showing resentment or suspicion, took quickly to the visitors working beside them and proved very supportive and helpful.

Media events and visits of dignitaries went off superbly. The 3664th Direct Support Maintenance Company, training at Bettembourg, was the subject of articles in four local newspapers, including a French regional paper, *Le Republicain Lorrain*, published in Metz. The other units received similar, if more constrained, media attention: a feature in *European Stars and Stripes*, a video spot on Armed Forces Network television, or a write-up in the local paper. In all cases, the units executed their work assignments with great enthusiasm and determination and, in some cases, asked for additional jobs.

Bottom Line: Increased Readiness

The effort taken to plan these training deployments obviously paid off in the execution, but what was the bottom line? The benefits were substantial, as it turned out, for the ODT units, CEBN, the supporting elements, and the U.S. Army as a whole.

CEBN gained from 20,154 hours of “free” labor (a cost-avoidance of just over \$540,000) that worked on a broad range of Army pre-positioned stock items, ranging from M1A1 tanks to light engineer equipment and large quantities of bridging. Supporting organizations, including the Luxembourg Army, were able to exercise their wartime mission-essential task lists to support deploying forces. And, although much harder to quantify, the ODT units themselves received valuable training while contributing to Army readiness.

Their experience was summed up by one young California Army National Guard soldier, Specialist Yvonne Diehm: “We’re doing real work that’s helping Army readiness. It’s great to come here and be needed and be productive. By the time we’re finished, we’ll have accomplished a lot. I really like that; it makes me proud of my unit and happy to be here.” **ALOG**

Keith Mostofi is the civilian executive assistant at Combat Equipment Battalion North in Bettembourg-Dudelange, Luxembourg. He has a B.A. from Hamilton College in New York and an M.A. from American University.

The photographs were taken by Gerianne Townsend, who is the public affairs officer of Combat Equipment Group-Europe.

Fixing the GAAP in Unit Accounting

by Captain Jared L. Ware

The author proposes a fiscal system based on generally accepted accounting principles to help Army tactical units manage their financial transactions.

The Army's tactical-level financial managers sometimes misunderstand and misinterpret the generally accepted accounting principles (GAAP) that have been established by the Financial Accounting Standards Board (FASB). As a result, they do not account properly for financial transactions at the tactical unit level and often overspend, underbudget, and even lose money. The problem continues to grow because financial transactions occur at different times and funds come from various sources. In a statement issued in 1992, after discrepancies were found in an audit of the Army, the General Accounting Office concluded, "These conditions occurred primarily because of the failure of personnel to follow many established policies and procedures."

The Tactical Unit Financial Management Information System (TUFMIS) was the first system used to manage financial transactions at the major Army command (MACOM) level and below. The Standard Army Retail Supply System-Objective (SARSS-O) reports logistics transactions for Army units to the Standard Financial Inventory Accounting and Reporting System (STARFIARS) and the Standard Finance System (STANFIN). However, only TUFMIS provides specific direction on how to account for financial transactions at the tactical unit level. STARFIARS and STANFIN are good financial management systems for large Army organizations, but both have limited functionality for a small tactical unit. Both are financial management systems well beyond the scope of an infantry battalion or engineer company. Today, Army decision makers rely on the Unit Integrated Logistics Analysis Program (Unit-ILAP) for information on which to base financial, supply, and maintenance management decisions. I would like to examine how TUFMIS, SARSS-O, and Unit-ILAP relate to GAAP and offer some accounting guidance for tactical units to follow when preparing a budget.

Managing the Army's Finances

The installation resource manager has limited guidelines for categorizing financial transactions using the cost distribution system. He cannot rely strictly on GAAP though, because most cost distributions occur outside of the accounting system. The resource manager must document separately any financial transactions that should be accounted for within an established

accounting system. At the same time, he must account for financial transactions that are funded within the fiscal year and those that are unscheduled, nonappropriated, or based on estimates.

According to Army policy, account managers will advise the resource manager on using funds properly. If the resource manager needs additional help, he can request assistance from the MACOM. Yet the resource manager also must follow fund control procedures contained in AR 37-1, Army Accounting and Fund Control. Ultimately, the resource manager is responsible for any procedure that he implements.

The resource manager has additional duties beyond financial accounting. He must make sure that personnel are trained on local operations, including accounting and input processes, fund control, and administration. He also must provide training on laws, directives, and policies that affect financial accounting. The resource manager must decide which processes and policies warrant training, and some of those may not follow GAAP.

The resource manager is not responsible for receipts, accruals, or payables. The Defense Finance and Accounting Service (DFAS) operating location (OPLOC) and individual fund managers share responsibility for administering receipts, accruals, and payables. (The DFAS has a number of OPLOC's, each of which supports an assigned group of installations.) The OPLOC is responsible for recording and accounting for all disbursements and collections and for administering accounts receivable. The only joint responsibility of the OPLOC and resource manager is determining the amount of unearned revenue. The OPLOC records all unearned revenue in the standard accounting system, and the resource manager ensures that all unearned revenue accounts are reconciled. The OPLOC has overall responsibility for maintaining a general ledger, and the resource manager is responsible only for ensuring that the general ledger accurately reflects the financial posture of his activity. These policies make it difficult for a resource manager to keep accurate accounting records over a fiscal year.

TUFMIS Revisited

TUFMIS is a standard cost distribution system that is used to disburse costs within the appropriated fund system. It was developed on the premise that most cost distributions are accomplished outside of the accounting system and should be supported by documentation generated and maintained by the responsible organization. The resource manager assigns codes as necessary to accrue costs associated with special projects and ensures that separate reporting requirements were met.

With TUFMIS, the manager has two methods to identify costs to a benefiting activity: cost transfers and re-

imbursable orders. Cost transfers are accounted for in the same appropriation, fiscal year, and allotment. Reimbursable orders are used when services were performed and the benefiting activity was funded by another appropriation or allotment. Reimbursable orders are developed based on cost estimates and billed based on actual costs.

TUFMIS does not have a well-established audit system. The OPLOC and the responsible resource manager are jointly responsible for auditing accounting reports and transactions. The OPLOC communicates the results of audits to the responsible resource manager, and vice-versa, as appropriate. Therefore, the audit is conducted according to whatever the OPLOC or resource manager deems appropriate. Accounting for financial transactions may occur monthly, quarterly, annually, or following a major exercise, which complicates the auditing process. Several different appropriations and allotment sources further exacerbate the auditing problems. Without established auditing policies, the TUFMIS audit process does not reflect accurately the financial transactions of a tactical unit.

SARSS-O

SARSS-O is a combat service support logistics Standard Army Management Information System (STAMIS) that provides stock control and supply management at the Army retail level.

SARSS-O is a state-of-the-art, near real-time, integrated system composed of five "four-tiered" subsystems. It supports the accountability, requisition, storage, issue, and management of supply classes II (clothing and individual equipment), III (petroleum, oils, and lubricants), IV (construction and barrier materials), VII (major end items), and IX (repair parts and components). It supports a split-operations scenario that performs supply management functions in peacetime, in a deployment situation, or during wartime for all combat service support elements, regardless of their geographic location.

SARSS-O was specifically designed to support the peacetime and wartime operations of tactical units. It has been used by tactical units for 7 years. The system uses a fully automated management information system. It has real-time and near real-time capabilities that allow financial managers to update and reconcile financial accounts continually based upon data in Standard Army Finance Inventory Accounting and Reporting System (STARFIARS) records.

The link between TUFMIS and SARSS-O presents financial challenges for tactical units. First, SARSS-O is not a financial accounting system, but a supply management information system. Second, it does not account automatically for transactions made for class I (sub-

sistence), class V (ammunition), and class VIII (medical materiel), which are a substantial part of combat operations. Finally, the policy and criteria changes caused by the Army's transition from TUFMIS reports create a financial accountability problem for tactical units. SARSS-O is a positive logistics change for the Army, but tactical units still lack a true GAAP financial accountability system.

Unit-ILAP

Unit-ILAP is an information management program designed to combine and compare data from stand-alone automated systems according to user input and needs. The program uses data from several logistics and finance STAMIS's to produce management reports that enhance supply, maintenance, and financial management performance. ILAP operates currently in over 300 sites units throughout the active Army and Army Reserve. Unit-ILAP reports integrate data covering a wide range of supply, maintenance, and financial management issues. Its data base is for informational management use and does not alter existing accountable records.

Unit-ILAP is a tool that makes financial management and decision analyses easier. Financial information from the databased Commitment Accounting System (dCAS), STARFIARS, and STANFINS goes into ILAP. From this information, ILAP produces financial management views. This gives resource managers, logistics managers, and tactical commanders the ability to cross-walk logistics events to financial transactions. This cross-functional capability enables better management of financial resources while conserving manhours and increasing accuracy of information used in determining readiness posture. Again, the problem for tactical units is that Unit-ILAP is an information management system, not a financial management system. Tactical units cannot use dCAS, STARFIARS, or STANFINS for their level of financial management. Therefore, they use ILAP's supply and maintenance reports to track financial transactions. This is not a good way to manage finances, but the reports are familiar to tactical units and produce enough financial information to track a majority of the unit's financial transactions.

Finding a Fix

I believe that the Army could solve some of its financial accounting woes by adopting a tactical-level financial accounting system based on GAAP. The primary objective of governmental GAAP is to assess and account for funds available for Government activities. The Army should switch to modified accrual accounting, which would provide an accurate measure of in-

creases and decreases in resources available to fulfill its operational obligations, especially at the tactical unit level. Modified accrual accounting also would provide for the recognition of revenues and expenditures, the incorporation of the budget into the formal accounting system, and the use of encumbrances to account for purchase commitments.

I also believe that the Army should adopt a voucher system to control expenditures. For accurate accounting and management control, every expenditure should be reviewed and verified carefully before payment. The unit budget officer should track all purchases made from local agencies for items not readily available through normal supply channels. The budget officer could reconcile these purchases monthly and submit a financial report to the MACOM resource manager. If the unit is deployed, the budget officer could send the monthly financial report by Internet or fax.

Finally, I believe that the Army should have outside auditors who guarantee that its financial statements are prepared in accordance with GAAP. Then Army auditors could use the same procedures by which they are audited to check a tactical unit's financial accountability.

Today, tactical units often deploy to areas where they are not immediately linked to the peacetime resource manager. In such cases, units are unable to obtain the financial resources they need to accomplish their mission. Such exigencies make the International Merchant Purchase Authorization Card (IMPAC) credit card an essential part of a unit's financial system.

Tactical units need a functional, stand-alone financial system based on GAAP that can be integrated into the Army's existing financial management system. By using a financial system based on GAAP, tactical units in the Army can begin to account for financial transactions properly and efficiently.

ALOG

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New Ammunition Packaging

by Captain Steven M. Noe

The term “best commercial practices” is taking on a new meaning as the packaging of small-caliber training ammunition gets a facelift. In an effort to reduce costs to its customers, Lake City Army Ammunition Plant in Independence, Missouri, and its parent organization, the Army Industrial Operations Command, teamed up with the Marine Corps to test a commercially designed package configuration for the 5.56-millimeter 10-round clip. This configuration, which reduces the cost of packaging, was ordered by the Marine Corps and tested last August at four training locations: Camp Lejeune Marine Corps Base, North Carolina; Camp Pendleton Marine Corps Base, California; Parris Island

Marine Corps Recruit Depot, South Carolina; and Quantico Marine Corps Base, Virginia. Lake City Army Ammunition Plant is the sole Government-owned producer of small-caliber ammunition for the Department of Defense.

The commercial pack, which currently is used only at training installations, provides numerous benefits. These include a significant cost reduction for packaging materials. Packaging alone accounts for approximately 24 percent of the price of the 5.56-millimeter 10-round clip. Use of the commercial pack also results in a weight reduction of 700 pounds per pallet. This alone will reduce shipping costs.



□ Finished outer boxes of the commercial pack, each containing 1,800 rounds, are palletized before the entire pallet is shrink-wrapped for shipment.

Level A Pack	Commercial Pack
3 10-round clips per point protector box (30 rounds per box)	3 10-round clips per point protector box (30 rounds per box)
4 point protector boxes per bandoleer and 7 bandoleers per M2A1 can (28 boxes and 840 rounds per can)	30 point protector boxes per inner box (900 rounds per inner box)
2 M2A1 cans per wirebound crate (1,680 rounds per crate)	2 inner boxes per outer box (1,800 rounds per outer box)
48 crates per pallet	48 outer boxes per pallet

□ A comparison of the current level A pack and the new commercial pack for 5.56-millimeter ammunition rounds.

Other benefits of the new pack include—

- Use of materials that are recyclable and environmentally friendly.
- A capacity of 1,800 rounds per box versus the 1,680 rounds per crate achieved when using the current level A pack.
- A new packing line that can be fully automated. This will eliminate repetitive motion injuries to workers because the new line eliminates the need to use M2A1 cans and wirebound crates.
- Use of the direct vendor delivery concept, which takes the product directly from the manufacturing facility to the customer.

The chart above summarizes the differences between the level A pack and the new commercial pack. A point



□ A worker at Lake City Army Ammunition Plant packs a level A pack (two M2A1 cans) into a wirebound crate.

protector box is a small box without a lid into which 3 clips slide, each clip with 10 rounds; the box protects the bullet end, or “point,” of each round from damage. With the level A pack, four point protector boxes fit in a bandoleer and seven bandoleers in an M2A1 can; two cans then fit in a wirebound crate.

With the commercial pack, the inner and outer boxes are designed from double-walled, corrugated fiberboard. They are sealed with acrylic, preprinted, pressure-sensitive, 3-inch tape. The outer box is shrink-wrapped in 5-millimeter-thick Polyethylene bags for waterproofing, and 3/8-inch nylon bands are added around the outer box for ease of carrying.

The Army Training and Doctrine Command and the Army Forces Command have agreed to test the commercial pack at four installations: Fort Benning, Georgia; Fort Campbell, Kentucky; Fort Jackson, South Carolina; and Fort Polk, Louisiana. In conjunction with this, the Marine Corps is conducting their second test of the pack. A total of 2.3 million rounds will be packed for the field evaluation. The possibility of developing a tactical variant of the commercial pack for use in field units is being studied. Such a field pack would be able to withstand long-term storage and the rigors of field duty. With total 1998 production of 5.56-millimeter ammunition scheduled at 191 million rounds, and with potential savings of \$19.58 per 1,000 rounds using the commercial pack, it's easy to see why the services are pursuing this project.

ALOG

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Vendor-Managed Medical Supply Sets

by Captain Anthony R. Nesbitt

The Army Medical Department (AMEDD) has made a major change in how it manages medical supplies. Instead of relying on military depots to store and dispense supplies to medical activities—the traditional way of doing business—the AMEDD now is using vendors to deliver supplies when and where they are needed. The AMEDD's Vendor-Managed Inventory (VMI) program and the Defense Logistics Agency's (DLA's) Prime Vendor program are new ways of administering the medical supply inventory. [See the article, "Prime Vendor: Velocity Management at DLA," in the January-February 1998 issue of *Army Logistician*.]

While the VMI and Prime Vendor programs have made a significant difference in how the AMEDD conducts its business, they have focused on peacetime operations and support to fixed facilities. The Army has not addressed the use of vendors in managing supply and resupply sets. I believe the Army should consider expanding its use of vendors to include mission sets tailored to support complex contingencies.

Think of the possibility of vendors configuring and managing sick call and trauma sets. What if that same concept was expanded, so that vendors built, managed, and distributed mission-specific sets to the Army? If vendors could give us this capability in support of complex contingencies, AMEDD logisticians would gain great flexibility in supporting the new missions that the Army increasingly is called on to execute. The VMI concept can work to our advantage within our modular resupply system.

Reducing Army Inventory

Under VMI, AMEDD pays a civilian vendor to store and maintain certain supplies that in the past were maintained by a medical activity. The vendor then is responsible for issuing those supplies to the Army on demand. Together, VMI and Prime Vendor have almost eliminated the need for supply support activities to maintain large medical inventories. VMI has been especially effective in managing chemical defense equipment and medical potency and dated class VIII supplies. The goal of these programs is to save money while maintaining readiness by eliminating the need for the Department of

Defense to maintain large inventories.

Using Inadequate Sets

The medical supply sets currently in the Army inventory, such as the trauma and sick call resupply sets, have proven to be less than adequate for current operations. There are a couple of reasons for this. One is a change in what the Army is asked to do. In recent years, the Army has embarked on new missions, specifically humanitarian relief or complex contingencies. Currently, there are no sets available to support these types of missions.

Another reason for the inadequacy of current Army medical supply sets is a change in the mix of patients the Army is called upon to treat. Development of the trauma and sick call sets was based on the casualty histories of World War II, the Korean War, and the Vietnam War; the sets therefore were designed to treat American soldiers, who were basically in good health and physical condition, in a combat environment. However, since the Army has embarked on multiple complex contingencies, the types of patients being treated have expanded beyond soldiers to include children and adults of all ages, who typically suffer from a broad range of diseases and nonbattle injuries. To treat those patients effectively, the Army requires specific supplies, most of which are not included in the current resupply sets.

The AMEDD has tried to support complex contingencies with the traditional sets. But this has proven to be wasteful; less than 50 percent of the contents of those sets are used. The challenge now is to find a way to get the right supplies to the right type of mission while maintaining the very effective modular supply system that now exists. Modular supply and resupply is necessary; it has proven to be the best way to sustain a force in the initial stages of any deployment, especially when an established supply channel does not exist and communications are inhibited. But we need to refine the modular supply system to meet the demands of new missions.

Tailoring Sets for Specific Missions

To provide sets with the right items for specific mis-

This article expresses views of the author, not the Department of Defense or any of its agencies.

sions, vendors could build and manage specific sets to support complex contingencies. These sets would be mission-tailored to support any contingency and would be ready for issue in the 24 hours before the deployment of any medical unit. With this system, the health care provider would receive the right supplies for the right mission.

Some may think that the concept of tailored sets for specific missions is too far-fetched and that vendors are not capable of, or even interested in, providing this type of support. In fact, DLA's Defense Personnel Support Center, at Philadelphia, Pennsylvania, has contracts in place with prime vendors such as DeRoyal, Isolyser, Medline MaxxiM, and Allegiance to configure specific surgical packs based on the preferences of individual physicians for performing specific procedures. These Medical/Surgical PrePacs are built and delivered within 24 hours to support a procedure such as an appendectomy. The same concept is working well for civilian hospitals like St. Lukes Hospital of Houston, Texas; their vendor is Allegiance, and they call the system Procedure-Based Delivery Systems.

As for vendor interest, when distributors were asked if they would be willing to provide tailored sets for pharmaceuticals, the overwhelming answer was "yes." Providing the Army with such support would cost the Army money, but the resulting service would be great.

The use of medical supply sets designed for contingencies is not a totally new concept. The 32d Medical Logistics Battalion experimented with building humanitarian sets to support a hurricane relief mission in the Virgin Islands. In that situation, there was a very high utilization rate, and the care providers were very pleased with the availability of the right supplies.

The issue isn't necessarily the capability or willingness of the vendor, it's money. Obviously, this capability would not be free. The cost probably would be very similar to the cost we now incur with vendor management of our chemical defense materiel and our medical potency and dated items unit basic load. However, when you compare the cost of the underutilization of the current sets to the cost of tailoring sets to specific missions, it is easy to see that the advantages of vendor-managed sets with the right supplies outweigh the duplication, redundancy, and waste associated with the current sets.

The need for the current trauma and sick call sets still exists. However, maybe the time has come to review the supply content of those sets as well. The trauma and sick call sets were developed a long time ago, and

many new drugs and new technologies have been developed since then. The current contents of those sets may not even be the latest or the best available items.

Creating Tailored Sets

So how do we get there from here? First, we have to get logisticians and experienced health care providers together to develop content lists for the sets. They also would have to decide exactly how many sets are necessary and what their size should be. Other questions, such as how to handle seasonal and special items, would have to be addressed. Consideration would have to be given to developing a common items list, and we would somehow have to figure out a days-of-supply package so that resupply could occur through the push method. We must leave ourselves the flexibility to update the class VIII contents of these sets.

The days of doing business with a total disregard for waste are over. We are being forced to do more with less. Vendor-managed preconfigured sets tailored to support specific missions make good sense. We can save money by not having to manage large inventories, we can better support our health care providers by giving them what they need when they need it, and we can eliminate the mad rush of supply requisitioning that we constantly experience immediately before a mission.

Our modular supply and resupply systems give us the ability to project logistics and predict needs—a must in any deployment. The idea of vendor-managed medical sets applies the concepts behind VMI and Prime Vendor to modular resupply and then goes one step further by tailoring sets to specific missions. Complex contingencies are here to stay, and so are downsizing and budget cuts. If we want to stay on the cutting edge of logistics, we must take a look at this concept. It gives us abilities we never had before. We owe it to our soldiers to do it. Vendor-managed prepackaged sets are the way of the future.

ALOG

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Convoy Support Center Operations in Croatia

by Captain Christopher J. Whittaker and Chief Warrant Officer (W-4) Billy S. Rhodes

The convoy support center in Virovitica, Croatia, provides quick-fix maintenance, recovers disabled vehicles, and is a welcomed respite for weary soldiers along the main supply route.

Located along the deployment route to Bosnia, the convoy support center (CSC) at Virovitica, Croatia, provides soldiers an opportunity to rest and have their vehicles maintained during major deployments and redeployments. Virovitica is approximately halfway between the intermediate staging base (ISB) in Taszar, Hungary, and the redeployment staging base (RSB) in Slovonski Brod, Croatia. The 503d Maintenance Company, a direct-support maintenance company from Fort Bragg, North Carolina, was tasked to support the deployments of both the 2d Armored Cavalry Regiment (ACR) "August Surge" and the 1st Infantry Division/1st Armored Division "October Surge" as part of ISB missions for Operation Joint Guard. As part of our mission, we operated the CSC at Virovitica. (See article, "Maintenance Support of the ISB," on page 9.)

Facilities

The CSC is set up in a bus repair depot that is located directly off the main supply route (MSR), which makes it easily accessible to convoys. The depot is a 5-bay maintenance facility centered in a large, open parking lot. The parking lot is approximately 500 meters square and is surrounded by an 8-foot-high chain-link fence with local security at the gate. It can accommodate approximately six serials of seven vehicles each. One bay is used by the Army for maintenance.

The depot has offices, latrines, and other rooms that are not available to the CSC. To compensate, Brown and Root Services Corporation, the Logistics Civil Augmentation Program (LOGCAP) contractor, provided latrines and trash service. A mobile shelter served as a tactical operations center (TOC) for the CSC team. A mobile kitchen trailer (MKT) served coffee and soup during inclement weather. The team did not have access to phone lines in the building, so a Croatian company was contracted to install a line that would ensure reliable communication with the ISB and RSB.



□ A road guard escorts a convoy into the parking lot at the CSC. The lot can accommodate approximately six serials of seven vehicles each.

Personnel and Equipment

The mission of the CSC was to provide quick-fix maintenance, vehicle recovery operations, and a place for soldiers in the convoys to rest along the route. We envisioned our mission as a mobile maintenance team (MMT) operation. The MMT is an independent unit that provides area support. It has both the tools and equipment for that type of mission. We chose a base version of the MMT but decided to bring along only the heavy wheel vehicle mechanics (military occupational specialty [MOS] 63S) and repairers (MOS 63W).

The number of personnel tasked to operate the CSC was determined by the anticipated length of the assignment, the number of convoys arriving per day, weather, and the availability of personnel. We routinely had a crew of nine personnel, with a warrant officer serving as the officer in charge (OIC). However, during the 1st Infantry Division/1st Armored Division swap, the number of personnel rose to 15 with the addition of 5 personnel dedicated to traffic control.

Our equipment was based on a standard MMT configuration and included a contact truck; an M1078 2-ton truck; an M998 high-mobility, multi purpose, wheeled vehicle (HMMWV); a power generator; a single-channel ground and airborne radio system

(SINCGARS) for the TOC; and an M984 heavy, expanded-mobility tactical truck (HEMTT) wrecker. Two MILVAN's also were positioned at the CSC. One held potable water for the MKT operations; the other was used to store personal gear, equipment, and repair parts such as belts, batteries, and petroleum products.

Based on lessons learned from other CSC operations, we carried a 5-ton tactical pump unit (TPU) with a 1,000-gallon fuel tank for emergency refueling situations. Likewise, a wheeled ambulance with a medical crew was included. The mechanics brought their own tool boxes in addition to the tools carried on the contact truck.

Operations

The OIC was the key to fluid and flexible operations. He received daily movement orders and convoy schedules from the ISB. Because of limited communication with the convoys, the OIC got a start point acknowledgment from the ISB and did not get an update until the convoy was approximately 20 minutes from the CSC. This update came as a phone call from the movement control team (MCT) at the Hungarian-Croatian border. The CSC team staged road guards to escort the convoys into the CSC parking area. As each convoy arrived, the road guards redirected or stopped traffic so the convoy

could enter the parking area without delay.

The OIC brought the convoy commander to the command post to brief him on choke points, threats, and current road conditions on the remainder of his route. In the meantime, the soldiers from the convoy had the opportunity to perform preventive maintenance checks and services on their vehicles, eat, and stretch their legs. The CSC soldiers moved quickly through the lanes checking for maintenance problems and making on-the-spot adjustments. After a 30- to 45-minute break, the CSC soldiers assumed their road guard positions and guided the convoy back onto the MSR. The OIC then notified the ISB of the departure time and vehicle count for the convoy.

Recovery operations originated when a vehicle was disabled in a convoy or was determined to be not mission capable (NMC) at the CSC. When a vehicle broke down along the route, the convoy commander reported it to the military police or the MCT. The support operations officer notified either the ISB or RSB, and a recovery vehicle was dispatched. Maintenance control points (MCP's) along the route facilitated equipment transfer from one area of responsibility to another.

Living Arrangements

Instead of commuting from the ISB on a daily basis, soldiers were billeted and fed in contracted facilities in Hungary near Virovitica. This allowed the CSC team to get to the CSC quickly when needed with only a short journey home each day and eliminated the risks associated with the 6-hour round trip from the ISB. The soldiers billeted in Hungary shared double rooms, had two meals a day, and had access to exercise facilities during evening hours. Lunch consisted of a hearty meal, ready to eat.

Lessons Learned

CSC operations in Croatia have brought to light several lessons learned that we would like to share—

- Communication is key to successful and responsive CSC operations. A major weakness in our vehicle recovery operations was the fact that there was no radio retransmission capability to vehicles that were beyond SINGARS range. In some cases, when a vehicle broke down out of radio range, the CSC was not notified until hours after the incident.

- Because of inadequate communications equipment, there were also lengthy delays in dispatching recovery vehicles. Relays along the entire MSR would have ensured accurate reporting by the MCT's, military police, and units and greatly accelerated recovery operations.

- Careful, precise communication is a must. Careless communication caused a great deal of confusion during vehicle recovery operations. Often, descriptions

of vehicle problems and locations were inaccurate or unclear. Sometimes a vehicle would be reported as inoperable at a particular place, but, by the time the wrecker appeared, the situation had changed. The unit may have solved the problem already, reported incorrect information, or recovered the vehicle without help from the CSC.

- If they are available for the mission, organizational mechanics (MOS 63B) may be better suited for recovery operations than direct-support mechanics. Having direct-support mechanics on hand provided greater maintenance capability, but most of the work during our tasking was geared toward organizational mechanics.

- A 5,000-gallon tanker is needed for onsite refueling. Having a larger quantity of fuel on hand ultimately would result in fewer refueling operations because all vehicles could receive a full tank of fuel. A TPU was barely sufficient for our operations.

- The MKT was a late but welcome addition to the CSC. The boost to morale that resulted from hot soup and coffee after a couple of hours on the road was incalculable. Many grateful soldiers expressed their delight in having a warm beverage during the cold convoy.

- A tactical operations center was invaluable. It provided a warm and sheltered place to run command and control operations. It also provided a protected briefing area in all weather that was critical for commanders.

The CSC at Virovitica, Croatia, is a model for support of peacekeeping deployments and redeployments. It provides convoy soldiers the best facilities and accommodations available along the deployment route to Bosnia in support of Operation Joint Guard. **ALOG**

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The Direction of Logistics Systems in the AMEDD

by Sergeant First Class Jan A. Potter

The Army uses many stand-alone computer systems that are costly to maintain and, in many cases, outdated. It is difficult to maintain these systems and transfer information from one to another. To reduce unnecessary spending and enhance readiness, the Department of Defense should establish an integrated automated system that mirrors the best business practices of corporate America. Those practices focus on smaller inventories and using a single, streamlined computer system.

One activity that has already moved in that direction is the Army Medical Department (AMEDD). Their Defense Medical Logistics Standard Support (DMLSS) system integrates all required functions and incorporates the modern business practices of both the Department of Defense and the commercial health care industry.

At one time, there were as many as 180 automated systems in the Army, Navy, and Air Force. Many of those systems performed the same or almost the same functions as others. The systems were set up in different languages, which complicated their ability to interface. In 1987, a national committee created electronic commerce/electronic data interchange American National Standards Institute (ECI/EDI ANSI) standard X.12 for transmission of financial information electronically. For the health care community, the Health Level 7 Standard Protocol Committee developed policy for and defined how vendors should format data so they could be shared by different systems within health care facilities.

Legacy Systems

The AMEDD Property Accounting System (AMEDDPAS) is an information management system that stores and manipulates records of acquisition planning, procurement, accountability, inventory, maintenance, and disposition of AMEDD property. The system was approved for use in 1976. Since then, many systems change packages (SCP's) have incorporated needed improvements. AMEDDPAS is now being ported to client-server architecture and to the DMLSS server. However, there is still difficulty in transferring information from AMEDDPAS to the Standard Army

Automated Contracting System and to the Theater Army Medical Management Information System (TAMMIS).

TAMMIS is an Army Medical Department logistics system that includes medical supply, maintenance, assemblage management, and patients regulating. It provides both the combat theater and fixed facilities tactical and medical commanders with information they need to manage medical resources and improve overall health care. Although TAMMIS has evolved in an attempt to keep up with Prime Vendor initiatives, duplicate manual data entry sometimes is required on two computer systems. It is costly to maintain multiple systems and to train medical supply personnel to operate them.

Operations Desert Shield and Desert Storm brought to light the fact that some of our reserve component forces and active duty soldiers who had recently completed advanced individual training or changed branches did not possess the computer skills needed to manage an inventory. This deficit further complicated an already difficult mission.

Tri-Service Systems Integration

The DMLSS system was developed to integrate the automated medical logistics systems of the Army, Navy, and Air Force into one. The forward customer service and facility management subsystems were implemented in 1993. Release 2.0, still to be fielded, includes customer support, enhanced facilities management, and customer area inventory management. Release 3.0 will include stockroom readiness inventory management and medical readiness decision support subsystems. The complete DMLSS system will incorporate all of the functions needed by logistics officers and medical supply specialists. DMLSS will replace aging legacy systems for all services and will allow interfacing with contracting and finance systems, eliminating the need for duplicate entry. This simplifies transfer of property and materials between the services and enhances joint total asset visibility.

Corporate Solutions

The logistics departments of most civilian hospitals are fully automated. Powercenter is a Windows-based

This article expresses views of the author, not the Department of Defense or any of its agencies.

system that is used successfully in a number of health care institutions to support their management needs. Powercenter offers six suites that automate accounts payable, general ledger, materiel management, package tracking, and report writing functions.

Outsourcing is considered by some to be a viable alternative for managing logistics functions in the AMEDD. Only 1 percent of military hospitals currently outsource materiel management, but, according to the sixth annual contract management survey reported in *Hospitals and Health Networks Magazine*, that number will increase fifteen-fold. Experience with outsourcing other DOD functions shows achievable cost reductions of about 20 percent. The survey report also states that more than a quarter of a million DOD employees are engaged in commercial-type activities that could be performed by competitively selected private companies. The report suggests that the DOD could outsource essentially all wholesale-level warehousing and distribution, depot maintenance, property control and disposal, and auditing.

The days of "deep pockets" in the military are gone; it is time for a more efficient operation. We need to work smarter through automation. If we cannot get the job done, there are many contractors who will be happy to try. Our future in medical logistics may depend on one information system that replaces many legacy systems. Otherwise, many of us are only a contract away from being out of work.

Sergeant First Class Jan A. Potter is an advisor in the Training Support Battalion, Fort Sheridan, Illinois. He has a B.A. degree in criminal justice from Ripon College in Wisconsin and is a graduate of the Medical Logistics Management Intern Program. Sergeant Potter has been certified as a senior by the American Society for Healthcare Materials Management.

Joint Communication: Verbal and Nonverbal

by Joseph R. Bainbridge

Communication is critical to logistics and will significantly impact joint logistics operations in the future. Joint logistics requires accurate perceptions and clear communications among the principals. This is not easily achieved.

Nonverbal Communication

Communication is not limited to spoken or written words. Often the most powerful exchanges are nonverbal. Although the speaker may have no hidden agenda, the listener may perceive one anyway; and what people perceive usually overshadows what the speaker said.

Attitude, enthusiasm, and delivery methods are as important as the words spoken. Important jobs are seldom filled without face-to-face interviews. Jurors often cite nonverbal behaviors as reasons to believe one person and discredit another. And, in the workplace, if an in-person meeting cannot be arranged, a teleconference with video links is much more desirable than a simple telephone conference. Why? Because we can see one another.

Most people would agree that body language delivers essential nonverbal information. Julian Fast's book,

Body Language, was a best seller in 1971. He said people react to body language and may not realize how much it influences their interpretation of verbal expression.

An unusual example of effective nonverbal communication that occurred in 1965 is described in Harry J. Maihafer's book, *Brave Decisions: Moral Courage From the Revolutionary War to Desert Storm*. A 30-year-old Army captain was stationed in Vietnam, serving as U.S. advisor to a Vietnamese airborne brigade. At one point, the airborne unit was deep in the jungle with a South Vietnamese engineer unit that was repairing a bridge. When the job was completed, the engineers invited the airborne officers to a bridge-blessing ceremony. They slaughtered a pig, poured half-glasses of Scotch, then filled the glasses with blood from the pig. The U.S. advisor joined in the toast, draining his glass without hesitation. Later his Vietnamese counterpart told him the engineer commander had hoped to embarrass the American. In essence, the U.S. captain had passed a nonverbal commitment-to-the-group test. The captain's name was H. Norman Schwarzkopf, Jr.

Nonverbal behavior, such as the young captain's, can affect relationships among the services and allied na-

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tions. Behavior sends signals to the others who witness it. This can bring about good relationships or can destroy the trust between two elements.

Selective Memory

When a label or attitude has been associated with an individual or group for some time, it becomes very difficult to change. For example, long-held negative views of civilians by military personnel, or of Army personnel by Navy personnel, can survive despite experiences to the contrary. Observations that fit the perception or expectation reinforce the image; observations that clash with the expectation are rejected or quickly forgotten. These same phenomena keep "lore" alive, even when facts contradict it.

After a crisis, the minds of the people involved often distort reality. The tendency is to remember, even exaggerate, positive accomplishments. Negative events tend to be forgotten or assigned to others.

To ensure that joint operations work smoothly, those involved must learn to see beyond pre-formed opinions and distorted memories and must be open to seeing each situation as it truly is.

Verbal Communication

Verbal communication is sometimes difficult even when all members of the group use the same language. The "receiver" of a spoken message may not glean from it what the "sender" intends. In a joint meeting, the Air Force representative may say, "I don't think the Marines should take that town; they will suffer too many casualties." The Marine Corps representative may perceive the message: "I don't think the Marines can take the town by the deadline." He may go on to think: "If the Air Force had bombed the town effectively, the Marines could occupy it easily." If all of the pertinent information is not conveyed, the listener can arrive at incorrect conclusions.

People may say what they think they are expected to say, rather than what they believe, endorse, or expect to happen. Command relationships can stymie a free-flowing exchange of ideas. A subordinate who is conditioned to follow his leader without question may fail to point out a flaw in a new plan.

Clear, noncontradictory vocal messages are essential to understanding one another. Without this understanding, there can be no cooperation.

Group Dynamics

Clear communications can occur between individuals; true group-to-group communication is rare. Some

studies show that decision-by-committee can result in less than optimal, compromised courses of action. This may be one reason why a single leader from one of the services commands a joint task force.

Dominance and submission characterize all societies and groups, including joint military groups. A leader emerges if one is not appointed. The writer of the minutes for a meeting can be powerful since the emphasis used in the spoken words can be altered in the written version. The message deliverer speaks for the entire group, even though not everyone in the group agrees with the message.

Did you ever make a suggestion to a group, have it ignored, only to have another member of the group say the same thing later, and it's acclaimed? Either you didn't present the idea well, or you weren't perceived by the group as a qualified solver of that problem. This can happen the same way on the golf course or in the war room. The joint commander may find himself trying to motivate the Army component commander to commit 100 percent to the Air Force's counterproposal, after the Army plan was not adopted.

The Future of Joint Logistics

Future operations will involve more "players," especially in military operations other than war. Some security threats will be a blend of military, law enforcement, civil, and nongovernmental agencies. Various cultures and value systems will intermingle. Small-scale contingencies will require joint, multi-agency, and multinational management. Consequently, the communication challenges will increase dramatically. Future joint leaders will need a broad base of behavioral and technical knowledge to manage effectively in a very complex environment.

Logisticians must consider the potential for misinterpretation, no matter how carefully they express themselves in spoken and written words. Human perceptions, behavior, and other nonverbal signals will impact the decisions made by logistics personnel. The remark, "That is not what I meant!" means we provided less than optimal support.

Joseph R. Bainbridge is a military analyst and instructor of joint logistics at the Army Logistics Management College, Fort Lee, Virginia. He holds a B.S. degree from Bloomsburg University of Pennsylvania and an M.Ed. from Virginia State University.

The logo for ALOG SYSTEMS features the word "ALOG" in a stylized, white, outlined font inside a green arrow-shaped box pointing to the right. To the right of this box, the word "SYSTEMS" is written in a bold, black, sans-serif font.

The information presented in Army Logistician's ALOG Systems is compiled, coordinated, and produced by the Army Combined Arms Support Command (CASCOM), Information Systems Directorate (ISD). Readers may direct questions, comments, or information requests to Lieutenant Colonel Thet-Shay Nyunt by e-mail at nyuntt@leedns1.army.mil or phone (804) 734-1207 or DSN 687-1207.

—Editor

WHO SUPPORTS COMBAT SERVICE SUPPORT SYSTEMS?

Computers are now an unavoidable part of our lives in the Army and at home. Whether we are in the field or in garrison, computers are indispensable tools in the hands of all soldiers, from privates to generals, and in all branches and all commands. Today, computer systems perform myriad combat service support (CSS) activities. They help us in our jobs by preparing load plans, tracking convoys, producing transfer documents, and checking the on-hand balance of "widgets" in a corps. Computers help us so much with these missions that they have become indispensable. What happens when a vital system goes down? You may know how to take care of your home computer, but are you ready to troubleshoot your unit's computer? The "can do" attitude may be inappropriate here. Do you know where to turn if your CSS system "crashes?" What happens if it just doesn't do what it's supposed to?

This column examines how the Army is addressing support issues related to keeping its CSS information systems running. Although the computer system that runs CSS Standard Army Management Information System (STAMIS) software may look like the same hardware that runs your Microsoft Office Suite, you need to make sure that the correct support network is in place. In other words, it is not a good idea to attempt repairs on hardware or software without proper instructions and authorization. Additionally, the support office staff responsible for your office automation may not be the same

people who take care of the computers in your CSS maintenance or supply activity.

Support for your CSS system could take on a number of permutations depending upon your particular type of unit and situation.

Battlefield support. The support structure established to meet the requirements of the CSS systems is the CSS Automation Management Office (CSSAMO). CSSAMO is a table of organization and equipment (TOE) organization and is not to be confused with an information management office, such as that for office automation systems, copiers, permanently installed networks, and telephones. CSSAMO supports systems that perform CSS functions, such as property accountability, maintenance, supply, and transportation.

Initially, system support is troubleshooting to determine whether the problem is with the hardware or software. Troubleshooting starts with the operator and proceeds to of solutions prescribed for each system and level of maintenance. Because CSS systems are now commercial off-the-shelf computers, they normally are issued with "user's guides" from the manufacturer. Troubleshooting hardware for a computer that won't start can be addressed as simply as this:

Symptom: Computer will not start.

Possible problem: Computer is not plugged into a power source.

Recommendation: Ensure power cord is attached to a central processing unit and is plugged into a power source. Push "power" button to start system.

If the system still won't start, proceed to the next protocol. The troubleshooting may recommend minor hardware solutions, such the replacement of the keyboard, mouse, or other "plug-and-play" items, such as monitors or external drives. These repairs should be performed only after coordination with support personnel. When in doubt, consult the CSSAMO. When repairs are beyond those prescribed for operators, the hardware should be consigned to direct-support maintenance, where it will be exchanged or evacuated for repair.

CSS software and operating system deficiencies must be handled by authorized support personnel. Based on the results of the diagnostics, the CSSAMO may instruct operators to reload software or provide other software-related instructions.

The CSSAMO is a battlefield requirement and normally is assigned in a—

- Theater army.
- Theater army area command (TAACOM).
- Area support group.
- Corps support command.
- Corps support group.

- Division support command (DISCOM).
- Armored cavalry regiment.
- Separate battalion or brigade.

The CSSAMO provides customer support to sustain CSS STAMIS, including software, limited hardware, and user-owned communications devices. It also monitors user training programs and new equipment fieldings. In addition to its general mission, typical CSSAMO tasks include—

- Loading, reloading, or copying software and systems change packages.
- Repairing and reloading damaged files.
- Connecting systems to local area networks (LAN's) or wide area networks (WAN's) (as required).
- Loading, reproducing, and maintaining tape libraries.
- Conducting customer assistance visits.
- Assisting units during deployment.
- Deploying to support units downrange.
- Troubleshooting system problems.
- Providing over-the-shoulder training as needed.

Garrison and installation support. Garrison and installation support requirements commonly are a mixture of TOE, table of distribution and allowances (TDA), and commercial contract solutions. Since a CSSAMO is a modified TOE (MTOE) resource, how are CSS systems supported in a TDA Army? Who supports reserve component (RC) MTOE units that are without a full-time CSSAMO? The MTOE may authorize a CSSAMO, but is the support feasible or practical, since RC units are often widely dispersed? The RC's have established unique organizations to meet their maintenance and supply requirements. Who supports these activities?

Answers to the above questions are likely to be unique. RC-unique CSS requirements more than likely will need unique solutions to support CSS systems. The local situation will determine how support will be obtained. Commanders will have to determine priorities for system support based on their mission requirements and resources. For example, an Army National Guard DISCOM may be authorized a CSSAMO by MTOE, but the commander may not authorize all of its personnel on a full-time basis.

A command's dependency on a particular system could determine the level of support the system receives. The Standard Army Retail Supply System-Objective (SARSS-O) may be required to operate without any lapse of service, which calls for dedicated support. The same command may determine that supporting the Unit Level Logistics System with a service call 3 working days after report of failure is sufficient. Each situation must be handled case by case.

Customer support for CSS systems could be provided by—

- TDA authorizations for CSSAMO functions.
- Augmentation TDA's for RC CSSAMO's.
- Memoranda of agreement with active component CSSAMO's.
- Contracted CSSAMO services with vendors recognized by the systems developers.
- Matrix support of the above options.

CSSAMO's, like the computer systems they support, are new to the Army. As the concepts and doctrine of this new organization mature, the Army will continue to study personnel strength, military occupational specialty (MOS) mix, formal training of technicians, and the relationship of equipment to non-CSS systems.

GLOBAL COMBAT SUPPORT SYSTEM-ARMY (GCSS-ARMY) UPDATE

The draft GCSS-Army system training plan (STRAP) was reviewed and updated in April by the CASCOM Information Systems Directorate Training Committee. The GCSS-Army STRAP is a key document that addresses training assumptions, concept, strategy, training testing, and evaluation for the system. Within the STRAP are elements such as the identification of MOS's to be trained (both enlisted and officer), strategies of training (new equipment training and institutional training), and resource summaries (to allow institutional trainers to forecast and/or allocate resources). The master STRAP is organized into the three tiers of the developmental process—Tier I: Retail (initial operational capability); Tier II: Wholesale/Retail Integration (interim enhanced capability); and Tier III: Joint and Combined (full operation capability). The STRAP addresses training issues for both active and reserve components.

SARSS-1 COMPACT DISC (CD)-BASED MULTIMEDIA TRAINING

Standard Army Retail Supply System-Level 1 (SARSS-1) operator multimedia training has been completed and the system CD's were delivered to the Government on 16 April. A SARSS-1 distribution list will be forwarded to the Joint Visual Information Services Center, Tobyhanna, Pennsylvania, which has been funded to replicate and distribute the multimedia products. Distribution will be made in June. Orders may be placed with Tobyhanna by sending an e-mail to vibuddy@ptd.net or by calling Donna Dudley at (717)-895-7283 or DSN 795-7283.