

ARMY LOGISTICIAN

NOVEMBER-DECEMBER 1999



War on Excess

ARMY LOGISTICIAN

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

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.

Submissions: Articles and information on all facets of logistics operations and functions are solicited. Direct communication is authorized and should be addressed to: EDITOR ARMY LOGISTICIAN/ALMC/2401 QUARTERS RD/FT LEE VA 23801-1705. Phone numbers are: (804) 765-4761 or DSN 539-4761; Fax (804) 765-4463 or DSN 539-4463; e-mail alog@lee.army.mil. Articles may be reprinted with credit to *Army Logistician* and the author(s), except when copyright is indicated.

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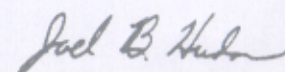
Eliminating redundant stock is an important part of the Army's efforts to "right-size" its forces and efficiently deploy its personnel to operations around the world. Beginning on page 30 is the story of how the 1st Cavalry Division successfully retrograded over \$12 million worth of equipment to Germany from Bosnia after assuming peacekeeping duties there. In the cover photo, a soldier attaches a radio frequency tag to a vehicle slated for shipment.

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:

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9921715

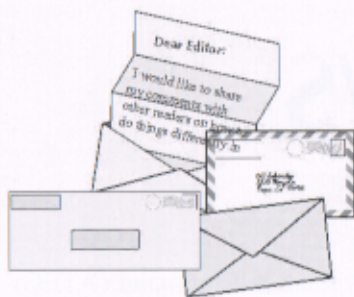
Coming in Future Issues—

- Creative Scheduling for Training
- Funding and Fielding New Warfighting Systems
- Integrating Active and Reserve Component Training
- Contracting for Depot-Level Maintenance
- III Corps Warfighter Movement Control Operations
- Joint Medical Evacuation
- RSOI and Regeneration
- Strategic and Operational Logistics Concepts
- Force XXI Help Desk
- Radio Frequency AIT in the Korean Theater
- Sustaining Combat in Korea
- Auto Parts at a Discount
- Expanding the Scope of Air Assault Logistics
- Reader Survey Results

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LOG NOTES

Should Civilians Join the Army?

Regarding "Deployment and Civilians: What Incentives Do We Need?" that appeared in your July-August 1999 issue: After reading Mr. Brenner's article, I contemplated how I should comment—as a retired CW2, or as a GS-12 with potential for deployment to a "hot spot."

My first thought (and I can't justify any other) is that we are moving ever closer to a mercenary army. Mr. Brenner's statistics on the deployment of over 2,000 civilians to Saudi Arabia should concern all of us. That the Army needed that many civilians to augment the force speaks volumes that the uniformed services are in a sad state of readiness.

You get no argument that the Army always has been augmented or supported by a Federal civilian work force. But providing motivational incentives will only increase the number of civilians on the battlefield, which will inevitably lead them to carrying sidearms for self-defense. You then only need to use a little imagination to see where Mr. Brenner's thesis leads us.

To permit civilians to volunteer in support of the force during a war as an act of patriotism is one thing, but to provide them monetary incentives to go is definitely mercenary.

My point of view (as narrow as it is): If people want to go to a battle zone, let them join the Army.

**CWO2 Arthur J. George (Ret.)
Chambersburg, Pennsylvania**

Regarding the article by Mr. Brenner, I am afraid he is doing the civilian component a disservice by his proposals for deployment incentives.

Mr. Brenner has based his proposals on the false premise that incentives are lacking at present. His approach is to shower the civilian with cash and cash-like incentives, ignoring reality. As a civilian transporter for the 417th Base Support Battalion, I have found that cash (be it under the guise of an increase in overtime pay, tax free exclusions, insurance benefits, or leave) is not the true motivator for most people. While his focus is on monetizing the benefits, he touches on most of the base issues but misses the point.

The true point, threading its way throughout the article, is inequity. For the overtime pay cap, the inequity lies in treating the workers differently based on their GS rating. As for the income tax exclusion, the military and the contractors may be exempt (the exemption for the contractor only applies to U.S. income taxes; he may be liable in the country he is working in). And for the life insurance, the inequity is that the military is exempt from the war clause.

The truth in the whole matter is that the civilian is placed at a disadvantage in deployments. Most of the civilians who are volunteering are not motivated by the money (although most will not turn down the added compensation); they are motivated by the same motivators as others throughout the Services—Duty, Honor, and Country.

It is my belief that there exists no major shortage of civilians volunteering, only a reluctance on the part of the Services to use them properly. As a civilian, I have constantly volunteered for contingency service, only to be rebuffed in favor of a (in my humble opinion) less qualified military member. The decision was always made by a military member and was based, at least in part, on the benefits that would accrue

to the service member (including the tax exclusion and medals).

**Kevin P. Burns
Kitzingen, Germany**

Unit Needs to Be Recognized

I'm writing in reference to the article, "Bombs to the Balkans," in the September-October 1999 issue. The article was well written as far as letting NATO know how well the Army reservists can move from a peacetime operation to a real-world mission and to be able to complete the mission in the allotted time. The Reserve soldiers worked very well alongside the civilian personnel at Hawthorne Army Depot, Nevada. My soldiers did their jobs as professionally as possible. I believe we earned the trust of the civilians at Hawthorne when they saw how professional we are in performing our jobs as reservists.

I must now hit you on the mistakes of your article—not for my own benefit but for the soldiers who worked under me for some very long days. Soldiers from the 351st Ordnance Company, not the 357th, are headquartered in Romney, West Virginia. They traveled to Hawthorne from Sierra Army Depot, California, by driving there. The 802d flew into Reno, Nevada, from Tooele Army Depot, Utah; then they drove down to Hawthorne. There were also civilian personnel who traveled from both locations to assist in the Noble Anvil mission. The soldiers from the 351st were never mentioned in your article, nor were they interviewed by your reporter. We carried the same work load as the 802d.

I feel some of the publicity should

have been spread around through the whole operation. I don't want it for myself but for my soldiers. I guess since I didn't bring the warrant officer from my unit to drive around your reporter, my soldiers didn't receive any recognition in your article.

I have not forgotten the 3d Corps Support Command from Des Moines, Iowa. One of their soldiers also should be acknowledged for an exceptionable job in support of the mission. The 351st worked well with Captain Michael Harvey and will look forward to working with him again in the future.

**Staff Sergeant Charles W. Coby, USAR
Romney, West Virginia**

Editor's Note:

The Army Logistician staff sent a note to Sergeant Coby apologizing for not checking the unit designation that was provided to us for publication. We try very hard to catch editorial and factual errors before articles are published.

The authors of this article are not members of the Army Logistician staff. When we receive an article on the activities of a particular unit, we try not to change the author's focus, and we seldom add information on other units that participated in the activity.

We appreciate the hard work of the 351st Ordnance Company and thank Sergeant Coby for bringing the error to our attention.

Unit Maintenance is the Key

The article by Lieutenant Colonel Winstead ("Evolution in Army Reserve Logistics," July-August 1999) outlined the need for a conceptual change in logistics thinking, especially in the maintenance arena. Unfortunately, I see some major faults and clashes with reality in this model. I am in agreement with the fact that some adjustments, and even some major changes, should occur in the way we provide full-time maintenance to USAR units.

The current Army Reserve Technician (ART) program is theoretically sound; the problem is that it was never implemented properly. The real "money-maker" of the program, which puts it leaps and bounds ahead of any contract, is the fully trained military personnel it provides to mobilizing, warfighting units. The idea that DS/GS maintenance, or "high end," is the current problem is simply not the case. The real "war-stopper" is, and always will be, organizational level not mission capable (NMC) equipment.

As I stated earlier, the program needs to be implemented fully to ensure that ART assets are in the correct military occupational specialties and fill appropriate slots in troop program units. Think about the concept of contracting out unit-level maintenance functions. Would any commander consider the option of calling another unit

(the organizational maintenance units mentioned by the author that do not currently exist) to repair NMC equipment in his or her area of operations? What about recovery? No; just as NCO's are the backbone of the army, unit maintenance is the backbone of Army maintenance, and contracting this out is absurd and actually quite dangerous. Let's fix the problems, not rewrite the whole doctrine (rapid repair forward) for a few saved dollars.

**CWO2 Robert Bailie, USAR
Greencastle, Pennsylvania**

Log Notes provides a forum for sharing your comments, thoughts, and ideas with other readers of Army Logistician. If you would like to comment on an Army Logistician article, take issue with something we've published, or share an idea on how to do things better, consider writing a letter for publication in Log Notes. Your letter will be edited only to meet style and space constraints. All letters must be signed and include a return address. However, you may request that your name not be published. Mail letters to EDITOR ARMY LOGISTICIAN, ALMC, 2401 QUARTERS ROAD, FT LEE VA 23801-1705; send a FAX to (804) 765-4463 or DSN 539-4463; or send e-mail to alog@lee.army.mil.

Please Return Your Reader Survey

Reminder to all readers: A Reader Survey form was included on pages 27 through 29 in the September-October 1999 issue of *Army Logistician*. An electronic version of the form appears on the *Army Logistician* website at <http://www.almc.army.mil/survey/alog/alogsurv.htm>. The self-mailing form contains 30 simple, multiple-choice questions and requires no more than 10 minutes to complete and return.

If you have returned your form already, we want to thank you for helping us plan for the future. If you have not yet returned your survey form to the *Army Logistician* staff, please do so as soon as possible. We value your opinions. This is your publication. Please help us provide the information you need in a format and style of your choosing.

—Editor



ALOG NEWS

ARMY ENDS 89-YEAR PANAMA MISSION

The Army's presence in Panama officially came to a close during ceremonies at Fort Clayton on 30 July. Marine General Charles Wilhelm, commander in chief of the U.S. Southern Command, headquartered in Miami, Florida, addressed approximately 100 soldiers and as many civilians still based in Panama. The remainder of U.S. Army South had departed and established its new headquarters at Fort Buchanan, Puerto Rico.

"From your new home in Puerto Rico, I will expect you to build new relationships with the Panama Defense Forces," Wilhelm told the soldiers assembled before him.

The ceremony ended nearly nine decades of continuous Army presence in Panama. The first soldiers arrived in 1910, and Army engineers were integral to construction of the Panama Canal. During World War II, the Army presence peaked at 65,000 soldiers who "protected the canal and the hemisphere," Wilhelm said.

Since the formation of the U.S. Southern Command in 1983, U.S. Army South has been "the doorway" to democracy-building and [the Department of Defense's] main point of contact with Central and South America, Wilhelm said. He said the Army command not only provided critically important canal security, but trained and exercised with Latin American forces; conducted humanitarian missions, the latest following the widespread destruction of Hurricanes Mitch and Georges; and played a pivotal role in ending a border dispute between Ecuador and Peru. He commanded the unit to "continue to perform as the tip of the Southern Command spear" from Puerto Rico.

"Your . . . mission here is done," he said. "You can report with pride, 'Mission accomplished.'" (See related story on page 26.)

ARMY CONSOLIDATES MATERIEL TESTING

The Army's operational and developmental testing activities were consolidated under the Army Operational Test and Evaluation Command (OPTEC) effective 1 October. To reflect its broader mission, OPTEC is renamed

the Army Test and Evaluation Command (ATEC). Its headquarters will remain in Alexandria, Virginia. ATEC will report to the Vice Chief of Staff of the Army through the Assistant Vice Chief of Staff.

Under the consolidation, ATEC has three subordinate activities—

- The Army Materiel Command's (AMC's) Test and Evaluation Command (TECOM) is now part of ATEC and is renamed the Army Developmental Test Command (ADTC). It maintains control of all of TECOM's test facilities and command of Dugway Proving Ground, Utah; White Sands Missile Range, New Mexico; and Yuma Proving Ground, Arizona. AMC retains responsibility for managing Aberdeen Proving Ground, Maryland, where ADTC will continue to be headquartered.

- OPTEC's Test and Experimentation Command (TEXCOM), headquartered at Fort Hood, Texas, remains under ATEC and is renamed the Army Operational Test Command (AOTC).

- The OPTEC Evaluation Analysis Center (EAC) at Aberdeen Proving Ground and the Operational Evaluation Command (OEC) at Alexandria, Virginia, are consolidated to form the Army Evaluation Center (AEC). AEC is headquartered in Alexandria, but current EAC personnel at Aberdeen will remain there.

The consolidation of operational and developmental testing and the creation of ATEC are the result of an Army Science Board recommendation.

SOLDIER INTERCOM SYSTEM FIELDIED

The Army Soldier Systems Center has put together a commercially available intercom system that allows infantry and other dismounted soldiers to talk to each other from distances up to 700 meters without giving away their positions.

The new system, called the Soldier Intercom (SI), can operate in all kinds of environments. Each SI has a receiver/transmitter, a rechargeable battery pack, and a headset with microphone. It allows a squad leader to talk to his entire squad simultaneously on a channel heard only by them.

(News continued on page 56)



NEWS

(News continued from page 1)

Instant communication means increased safety for soldiers in the field. In the past, they had to rely on unaided voice commands or hand signals to communicate with each other. Either practice put them in jeopardy by compromising their positions.

By purchasing commercial off-the-shelf items, the Army saves research and development dollars and reduces the time from concept to delivery. The Army plans to "push-issue" the SI to the field (at no cost to the individual units) through purchases from the General Services Administration and approved unit priority lists.

The SI was fielded to the soldiers of the 75th Ranger Regiment and the 82d Airborne Division in 1998. Fielding to other dismounted units will continue through 2001.

IMPROVED FIELD LATRINES DEVELOPED

U.S. forces deployed in support of previous operations found that field-expedient latrines were not suitable in certain situations. Therefore, the Army Soldier and Biological Chemical Command has developed several new latrine systems for use in the field—

- The modular initial deployment latrine (MIDL) (right) is a portable, highly mobile latrine system designed to accompany deploying personnel into a theater of operations (D0 to D+30). It



consists of a privacy screen and a collapsible toilet that contains a disposal bag. Each bag must be sealed and disposed of after use. One MIDL will support up to 25 soldiers and can be set up outdoors or in a shelter.

- The maturing theater latrine (MTL) (left) is a portable toilet that is suitable for use in the theater following initial deployment (D+30 to D+120). It



is similar to the portable toilets used at outdoor events. Waste must be removed from the MTL and disposed of or burned.

- The follow-on latrine (FOL) (below) consists of an 8-foot by 8-foot by 20-foot ISO container with six low-water flush toilets in privacy stalls; a trough urinal; two waste-collection tanks; two sinks with hot and cold running water; a 6-gallon water heater; mirrors; and dispensers for soap, toilet paper, and paper towels. Each privacy stall has shelves and hooks to hold a soldier's equipment. Each FOL is equipped with heat, air conditioning, and a fan for ventilation. Waste is contained in a ventilated internal storage tank that must be emptied daily. The FOL can be set up by two soldiers in approximately 45 minutes and relies on external electricity and water sources. The FOL, which currently is in production for the Force Provider system, will support up to 150 personnel, primarily in the rear area of a maturing theater (after D+120 to end of operation).



DOD SEEKS TO IMPROVE AIR TRAVEL SAFETY

The Department of Defense (DOD) and the Air Transport Association of America signed an agreement on 5 August for six major U.S. airlines to conduct safety assessments of foreign carriers participating in "code-sharing."

Code-sharing describes a partnership between U.S. carriers and foreign carriers in which airlines exchange seats with another carrier and sell them as if they were their own. Under this program, a passenger could purchase a ticket from Chicago to Germany with a connection in New York and find that he is transferring to the U.S. airline's code-sharing foreign partner even though his ticket has only the U.S. airline's name on it.

Approximately 200,000 DOD personnel travel on foreign carriers each year. DOD has a legal responsibility to evaluate the carriers on which it sends its personnel. While DOD may be confident of the safety standards that U.S. airlines must meet, the safety standards of a foreign carrier may be unknown. The goal of this program is to ensure that all code-sharing carriers meet specific safety standards set by DOD and the International Civil Aviation Organization.

The six airlines—American, Continental, Delta, Northwest, TWA, and United—participating in the agreement

will assess their foreign partners within the next year to ensure that they have sound safety processes and procedures. The U.S. carrier conducting an assessment must help its partner correct any problems found. DOD may bar a code-sharing carrier from official DOD travel if problems cannot be resolved. Initial assessments are due 4 August 2000 and assessments must be repeated every 2 years.

Since DOD uses not only contract carriers but also a large number of scheduled flights for official travel, all travelers will benefit from this program.

SUPPLY AWARDS ANNOUNCED

The following first-place winners of the 1999 Supply Excellence Award were announced on 20 September by Army Chief of Staff General Eric K. Shinseki—

Active Army

TDA (Small). Army Garrison, III Corps and Fort Hood, Texas.

TDA (Large). Maintenance Activity, Mannheim, Germany.

Supply Support Activity (Small). Company C, 25th Aviation Regiment, 25th Infantry Division (Light), Wheeler Army Air Field, Hawaii.

Supply Support Activity (Medium). Company C, 801st Main Support Battalion, 101st Airborne Division (Air Assault), Fort Campbell, Kentucky.

Supply Support Activity (Large). 725th Main Support Battalion, 25th Infantry Division (Light), Schofield Barracks, Hawaii.

MTOE Company With Property Book. Headquarters and Headquarters Company, 501st Military Intelligence Brigade, Yongsan, Korea.

MTOE Company Without Property Book. 72d Ordnance Company, Korea.

MTOE Battalion With Property Book. 41st Signal Battalion, Yongsan, Korea.

MTOE Battalion Without Property Book. 725th Main Support Battalion, 25th Infantry Division (Light), Schofield Barracks, Hawaii

Army National Guard

TDA (Small). 90th Troop Command, Oklahoma City, Oklahoma.

TDA (Large). Maneuver Training Center, Camp Grayling, Michigan.

Supply Support Activity (Small). Company B, 193rd Aviation Regiment, Wheeler Army Air Field, Hawaii.

Supply Support Activity (Medium). U.S. Property and Fiscal Office-Nebraska, Lincoln, Nebraska.

Supply Support Activity (Large). U.S. Property and

Fiscal Office-Louisiana, Alexandria, Louisiana.

Army Reserve

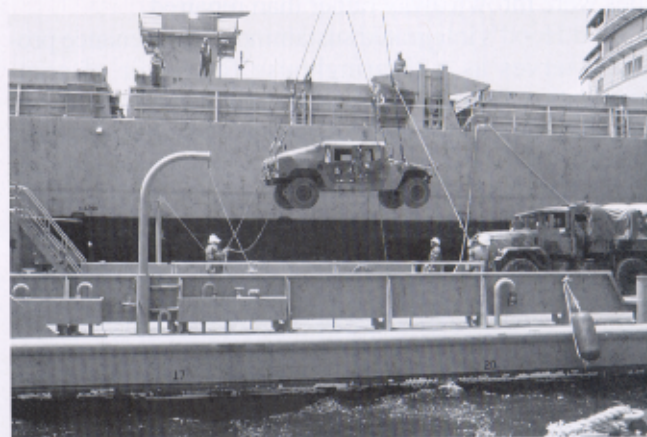
TDA (Small). Headquarters and Headquarters Detachment, 1189th Transportation Terminal Brigade, North Charleston, South Carolina.

MTOE Company With Property Book. 824th Transportation Company (Headquarters Battery), Morehead City, North Carolina.

MTOE Company Without Property Book. Company A, 411th Engineer Battalion, Maui, Hawaii.

MTOE Battalion With Property Book. 94th General Hospital, Seagoville, Texas.

MTOE Battalion Without Property Book. 489th Civil Affairs Battalion, Knoxville, Tennessee.



□ Equipment is discharged from the *S.S. Equality State* (above) during an Army and Navy joint logistics-over-the-shore (JLOTS) exercise conducted off the coast of Puerto Rico last summer. Performing JLOTS is necessary when deep-water ports are not available or sufficiently equipped to offload equipment in port.

In the exercise, 115 heavy trucks and high-mobility, multipurpose, wheeled vehicles were moved from the shore to the ship and back ashore. Planners from the 832d Transportation Battalion, a Military Traffic Management Command (MTMC) unit stationed at Fort Buchanan, Puerto Rico, used the Integrated Computerized Deployment System (ICODES) to draw a diagram of each level of the ship and compute exactly where to stow each piece of equipment.

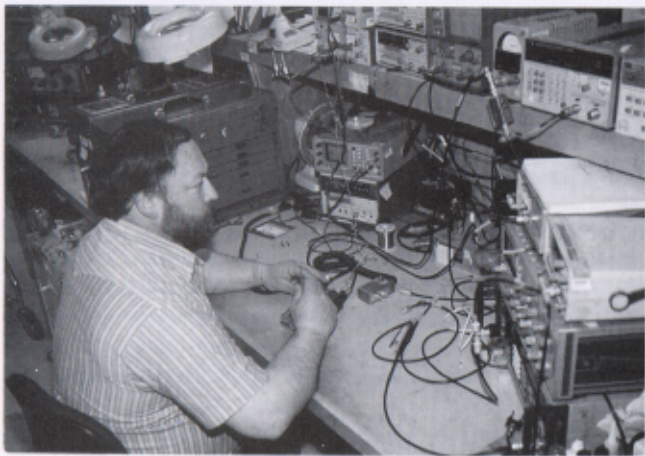
The JLOTS exercise was a part of Exercise Blue Advance, a Joint Chiefs of Staff event staged to develop and refine crisis action procedures; plans; and command, control, communications, and intelligence. The exercise also supported the deployment phase of Operation Caribbean Thunder '99, an Army Reserve Command combat support and combat service support exercise already underway in the region.

CENTRAL REPAIR PROGRAMS SAVE TIME AND MONEY

Communications-electronics repair programs at Fort Bragg, North Carolina, and Fort Hood, Texas, are saving the Army thousands of dollars and cutting repair turn-around times significantly.

Fort Bragg has established a central drop-off point for its 18 units that require repair support for their AN/PRC-126 handheld radios. Fort Bragg mails the radio components to Tobyhanna Army Depot, Pennsylvania, where they are repaired and mailed back to Fort Bragg. This system replaces the former practice of sending the radios through the regular supply system and cuts days off the turn-around time. The program began with the repair of circuit cards but has expanded to include other components, such as the PRC-126's frames and panels and its frequency synthesizer modules. Previously, these modules were thrown away rather than repaired.

Fort Hood's integrated sustainment maintenance program serves as a clearinghouse for repair of communications-electronics systems and components for all installations west of the Mississippi. Tobyhanna's electronics mechanics use the inspect-and-repair-only-as-needed (IROAN) concept, which excludes extensive cosmetic repairs and helps to minimize turn-around times.



□ An electronics mechanic at Tobyhanna Army Depot tests the frequency synthesizer module of an AN/PRC-126 handheld radio.

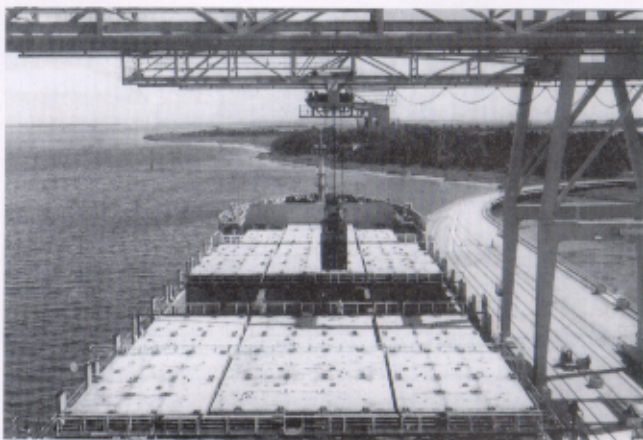
COMBAT SUPPORT VEHICLES GET NEW INTERCOMMUNICATIONS SYSTEMS

Teams from Tobyhanna Army Depot, Pennsylvania, are upgrading the communications capabilities of M992 field artillery ammunition support vehicles (FAASV's) by installing an improved radio system. The AN/VIC-3 Vehicle Intercommunications Systems will provide vehicle crewmembers the ability to communicate with each other

as well as among vehicles in the same unit.

The AN/VIC-3's are replacing AN/VIC-1 systems at a cost of \$16,000 each. Each system has a master control station, headsets, and components that route voice signals. The master unit allows each station to listen only, transmit only, or both and has optional push-to-talk or voice-activated operation. A single-channel ground and airborne radio system transmits communications among vehicles.

The AN/VIC-3 was designed by Royal Ordnance of England and built by Grumman Corporation. The Tobyhanna teams will install the AN/VIC-3 in 346 FAASV's this year.



□ The Deployment Support Command's 597th Transportation Group at Military Ocean Terminal, Sunny Point, North Carolina, proved it could handle the challenge of meeting depot-to-port ammunition distribution and surge requirements when it completed the upload of the Military Sealift Command's *MV Chesapeake Bay* in 2 grueling 24-hour workdays. The operation was in support of the Joint Chiefs of Staff exercise, *Turbo Cads '99*. This was the first time the North Carolina port was used for a *Turbo Cads* exercise—a test designed to confirm a unit's ability to distribute containerized ammunition. After leaving port, the ship sailed first to Guam to unload 256 containers of munitions, then on to Korea to discharge the remaining 597 containers.

NEW FORCE PROJECTION FM COMPLETED

Field Manual (FM) 100-17-5, *Redeployment*, dated 4 August 1999, has been completed. The final approved version currently is available on the Army Combined Arms Support Command's website at http://www.cascom.army.mil/multi/Field_Manuals/FM_100-17_Series/. It has been submitted to the Army Training Support Center to be included in the Army Digital Library.

The new manual is one of the FM 100-17 series of manuals on force projection. FM 100-17 is the capstone manual, and of the five subordinate manuals designed to provide additional information, four have been completed. FM 100-17-1 talks about the use of pre-positioned afloat stocks, while FM 100-17-2 addresses pre-positioned stocks on land. Reception, staging, onward movement, and integration is the subject of the recently published FM 100-17-3. FM 100-17-5 establishes doctrine for planning and executing redeployment operations. It discusses the functions and responsibilities of Army units and supporting organizations and systems in conducting redeployment. The final manual in this series, FM 100-17-4, Deployment, also is nearing completion. It will describe the movement of forces from their home or mobilization stations to ports of embarkation.

For more information on FM's 100-17-4 and -5, call (804) 734-2065 or DSN 687-2065 or send e-mail to jaeckler@lee.army.mil.

CECOM SEC OFFERS SOFTWARE SOLUTIONS

The Army Communications-Electronics Command (CECOM) Software Engineering Center (SEC) designs, develops, deploys, and maintains Army software to support the Army warfighter. Its software design activities at Fort Monmouth, New Jersey; Fort Huachuca, Arizona; Fort Sill, Oklahoma; St. Louis, Missouri; Letterkenny Army Depot, Pennsylvania; Fairfax, Virginia; and Fort Lee, Virginia; and its two field offices (Europe and Korea) produce over 80 percent of the Army's software systems. The center also develops websites, maintains Internet sites, resolves potential Y2K-associated problems, and assists with other information technology needs.

A video that describes the mission and functions of CECOM in more detail is available in VHS or CD-ROM format. To obtain a copy of the video or information on the SEC's products and services, call (703) 806-3349 or send an e-mail to jorgensc@issc.belvoir.army.mil.

TROOPS AID HURRICANE FLOYD VICTIMS

When Hurricane Floyd hit the eastern United States in September, both active-duty and reserve component soldiers, sailors, and airmen helped civil authorities deal with one of the largest storms ever to threaten the area.

Over 10,800 Army National Guard troops were called out to help. "The spirit of cooperation among all of the various agencies was tremendous," said North Carolina Army National Guard Major Barney Barnhill. "Everybody did what they could to help out."

About 30 Army, Coast Guard, and Navy helicopters rescued people stranded along the North Carolina coast to safety and looked for others who needed help. Tennessee, Georgia, and Florida each sent two Army National Guard UH-60 Black Hawk helicopters to reinforce North Carolina's fleet of utility helicopters. Soldiers from the 57th Medical Company (Air Ambulance) at Fort Bragg provided medical evacuation and hoist support.

Meanwhile, North Carolina Air National Guard members flew in 33,000 cases of meals, ready to eat, in 3 C-130 cargo planes for flood victims. Other Air Guardsmen erected a tent town for 80 people near the Wilmington airport. Forty-nine of the state's armories were opened so Guard members could help the people evacuated from the flooded region between Interstate 95 and the coast.

New Jersey Army National Guard members focused their efforts on the northern part of that state, where heavy rain caused river basins to overflow. Guard members rescued hundreds of Garden State residents, including 100 senior citizens from a nursing home in East Brunswick.

Virginia Army National Guard soldiers helped provide bottled water to flood victims in Portsmouth, where flooding and power failures shut down that coastal city's water supply system.



□ A crane crew from Defense Distribution Depot Tobyhanna, Pennsylvania (DDTP), loads part of a Force Provider module onto a tractor-trailer for movement to Europe. A Force Provider module is a tent city with recreation facilities and equipment to accommodate 550 soldiers. Modules are shipped in large containers, some of which resemble the boxes tractor-trailers haul. Two Force Provider modules were shipped to meet requirements in the European theater. Twenty-three SEAVAN containers were used to ship the modules.



DOD SETS Y2K PROBLEM-SOLVING OFFICE

The Office of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence has established a Year 2000 (Y2K) Decision Support Activity (DSA). The DSA serves as a focal point for answering Y2K policy questions, providing points of contact for answering Y2K policy questions, and addressing problems that may occur in defense infrastructures, such as telecommunications, power, and transportation systems, during the Y2K transition. (The Y2K problem refers to the past computer industry practice of writing years with just two digits—1999 would be “99.” Because of this digital shorthand, on 1 January 2000 some computer systems might treat “00” as “1900” or just shut down all together.)

Once fully staffed, the DSA will focus on three key areas. First, it will operate a small “call center” to take questions on Department of Defense (DOD) Y2K policy, facilities, or systems. During the Y2K transition, the call center will serve as the initial point of entry for all requests for foreign or domestic assistance made by the Department of State or the Federal Emergency Management Agency. The DSA will document the requests and forward them to Secretary of Defense William Cohen’s Executive Support Center (ESC). ESC personnel will coordinate the requests with the Office of the Secretary of Defense, the Joint Staff, and the Army’s Director of Military Support. The center then will forward the results of its coordination to the Secretary of Defense for approval.

Second, by monitoring global and national news sources, the DSA will track problems wherever they occur throughout the world. The information-gathering effort will help to differentiate problems that routinely occur in some systems from those that may be caused by the Y2K transition.

Finally, the DSA will monitor DOD’s cyber systems and physical infrastructures. It will track reports of potential infrastructure problems and inform the ESC, which is responsible for coordinating any further action needed. According to Jeff Gaynor, Director of Y2K Operations, monitoring DOD’s systems will help assessment efforts and ensure that problems are addressed before they adversely affect DOD operations.

To contact the DSA call center, dial 1-877-853-4Y2K (4925).

LOGISTICS SYSTEMS Y2K TEST LARGEST EVER

In July, the Department of Defense (DOD) conducted a test of military logistics systems to determine if they will recognize 2000 as a leap year. DOD previously tested the systems for other key Y2K dates, such as 1 October 1999, the beginning of the fiscal year, and 1 January 2000.

The test, which involved more than 1,000 civilian and military personnel at 22 locations, covered DOD’s 44 most critical logistics systems. The Office of the Secretary of Defense, the Defense Logistics Agency, the Defense Information Systems Agency, the U.S. Transportation Command, and all four Services participated in the test, with the Joint Interoperability Test Command providing test verification and validation.

According to Zach Goldstein, DOD’s director of logistics information technology, the tested systems do about \$80 billion worth of DOD business and process 2.5 billion transactions annually. By some estimates, this is twice the amount of commerce conducted last year on the Internet by the remainder of the country.

During the test, technical experts built duplicate networks, often referred to as parallel processing environments, then rolled their computer clocks forward to 28 February 2000 so they could simulate the week of 28 February to 4 March. This was important because many computers were not programmed to recognize the year 2000 as a leap year. The 3-day test was designed to identify the systems that need to be fixed before problems actually occur.

Goldstein said that the test was the culmination of more than 7 months of work on the systems to identify, analyze, and fix problems. “Now we’re seeing how the systems work together, because that’s how we do military operations,” he said. Analysts were watching to see if the systems communicated correctly during the date changes and if they produced accurate information.

Preliminary results were good. Only a few minor faults were evident during the testing. Roger Kallock, Deputy Under Secretary of Defense for Logistics, observed, “We feel very confident, based on what we’ve seen here and what we’ve demonstrated, that we’ve got a system that works and works well.” Warning that despite all DOD’s efforts, some undetected glitches could surface, he said, “We don’t know what we don’t know, so there could be some surprises down the road.”

CECOM SYSTEMS READY FOR Y2K

Officials at the Army Communications-Electronics Command (CECOM) say that the thousands of mission-critical systems they manage for the Army are ready for

According to Theodore Dzik, the CECOM Y2K program manager, CECOM is responsible for more than one fourth of the systems that are critical to the Army's mission. Of those, more than 99 percent have been certified as Y2K compliant. The equipment tested and certified by CECOM falls into four major categories—

- Research, development, and acquisition, which includes mission-critical automated battlefield systems.
- Infrastructure, which includes personal computers, peripherals, networking applications, networks and switching, and commercial off-the-shelf products.
- Logistics, which includes the Commodity Command Standard System, the Standard Depot System, and unique and bridge systems.
- Installation and garrison, which includes fire and security alarms and post, camp, and station systems and equipment.

MTMC READY TO ROLL IN Y2K

gan to devise year 2000 (Y2K) solutions they hoped would keep Department of Defense (DOD) transportation systems running smoothly into the next century. As a result, after midnight on 31 December 1999, troops won't have to worry about finding food in the chow hall, losing their unaccompanied baggage shipments, or being supported in the field.

MTMC is responsible for moving everything that supports DOD's warfighters during peacetime and wartime. Each year, it loads and unloads more than 10.6 million tons of cargo, delivers more than 110,000 military vehicle shipments, and makes more than 630,000 personal property and unaccompanied baggage shipments and about 75,000 privately owned vehicle shipments. That makes MTMC's Y2K problems more complex than those of most organizations. "With all the things going on in the world today, if it [traffic management] stops or slows down, we'd have a significant problem supporting the warfighters," said Elizabeth M. Imhof, MTMC's Y2K project manager.

MTMC fixed the two-digit problem in its personal computers by buying nearly 1,200 new ones at its headquarters and 51 locations worldwide. It also replaced its file servers, communications devices, routers, hubs, and other network components that comprise its "information technology infrastructure." According to Imhof, all of the software and systems used to run the command's worldwide transportation network have been checked for Y2K compliance.

"We made all the changes and went through extensive testing and verification," Imhof said. Even in a worst-case scenario, MTMC wouldn't shut down because of an automated Y2K failure, she noted. "There are contingency plans that will allow us to continue our mission, just a little slower."

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Wargaming: The Key to Planning Success

by Lieutenant Colonel Terry W. Beynon, Major Carl Bird, and Major Burt D. Moore, USAR

Logistics input is essential to success during the wargaming process. The authors discuss the logistician's part in wargaming and how it can be applied in operations other than war.

A division-level logistics planner walks out of a course-of-action wargame session thinking about the many questions that were never considered or answered. The G3 never let him get a word in during the entire meeting. "They don't really care about logistics," the planner muses. "They just give lip service to the commander, but that's it. So what am I going to tell the G4 during the backbrief? He is not going to be happy about this."

If you think this scenario sounds familiar, you are not alone. Many logistics planners frequently experience the same thing and are frustrated by the wargaming process. Logistics planners can minimize, or even eliminate, their problems if they take the time to prepare themselves and if they understand how to participate actively in wargaming.

This article will focus on the division-level wargaming component of the military decision-making process (MDMP) and its application to planning operations in Bosnia. However, these techniques can be applied to the planning process at any level of command. Logisticians must be prepared to contribute to the wargaming process and must understand what they should learn from it. Finally, logisticians should be able to communicate their concerns to the maneuver planners, staff, and commanders.

Military Decision-Making Process

The MDMP is an adaptation of the Army's analytical approach to problem solving. The seven-step MDMP process, as described in Field Manual (FM) 100-5, Operations, is a tool that assists the commander and staff in developing logistics estimates and a plan. However, logistics planners must know and understand the process to be truly effective.

Wargaming

Wargaming is a step-by-step process of action, reaction, and counteraction for visualizing the execution of each friendly course-of-action (COA) in relation to an enemy's COA and reactions. In the wargaming process, planners determine how to apply combat multipliers to the COA to improve the possibility of mission success and minimize risks to soldiers. The logistics planner must be prepared to examine the deep, close, and rear operations spectrum in a wargame. The rear area commander in the division is the assistant division commander for support (ADC-S). Therefore, it is critical for the logistics planner to take all aspects of rear operations into consideration.

Although the G3 has primary responsibility for security, terrain management, and tactical movements, the logistics planner must keep the rear area commander's

Logistics Planner's Wargaming Process

Step 1: Gather the tools.

- References: Operations Logistics Planner (OPLOGPLN) ; G1/G4 Battlebook; "smart" books (planning factors that you have accumulated over a career); density listings; support matrixes; status of supply stocks.

- Current personnel and logistics estimates.
- Personnel and maintenance attrition rates.
- Tonnage and lift capabilities.
- Consumption rates.
- Time-distance factors.
- Doctrinal relationships and distances between logistics activities.
- Strength and operational readiness rates.
- IPB (intelligence preparation of the battlefield) of the rear area. This includes an enemy template of the rear area.
- Current unit locations.

Step 2: List all friendly forces.

Include all organic, assigned, attached, operational control, direct support, general support, and combat service support units. Include priorities of support for these units.

Step 3: List assumptions.

Include higher headquarters assumptions and assumptions from estimate process. Do not assume away problems. An assumption is appropriate if it meets the tests of validity and necessity.

Step 4: List known critical events and decision points.

Critical events are those that directly influence mission accomplishment. Examples are—

- Essential, specified, and implied tasks from mission analysis.
- Possible movement of the division support area.
- Named areas of interest (NAI's) and targeted areas of interest (TAI's) in the rear area.
- Brigade and division boundaries.
- Air defense coverage.

Step 5: Determine evaluation criteria.

Include those factors the staff uses to measure the relative effectiveness and efficiency of one course of action (COA) relative to other COA's. Criteria may include specific items from the commander's intent or critical events. Criteria also should include what may be important to the assistant division commander for support or division support command commander.

Step 6: Select the wargame method.

Logistics planners have little impact on which method is used. This normally is selected by the G3. However, logistics planners must understand each method.

Step 7: Record and display results.

Many planners do not realize the importance of this step. Recording the wargame results gives the planner a fully analyzed record on which to build a task organization and synchronization matrix and to prepare operations plans. Recording results also provides information for the concept of support, logistics overlay, and logistics synchronization matrix.

Step 8: Wargame the battle and assess the results.

Logistician's Checklist For Preparing Post Wargame Products

- ___ Concept of support. How the division is going to weight the main effort logistically. The logistics culmination point. Defining the line that maneuver commanders dare not cross.
- ___ Other logistics units in the area of responsibility, which may include multinational units.
- ___ Logistics overlay. Placement of logistics units and corps plugs. Time and distance factors influence the placement of units to provide support.
- ___ Logistics synchronization matrix. This is in concert with battle duration of each event as well as the duration of the entire operation.
- ___ Logistics task organization.
- ___ Identification of tasks for subordinate units.
- ___ Refined loss estimates.
- ___ Sufficiency of main supply routes and space.
- ___ Throughput capability
- ___ Movement times and table.
- ___ Movement program requirements.
- ___ External support requirements.
- ___ Priorities of support. This is not just 1st, 2d, and 3d brigades, but to what strength level and by what timeframe.
- ___ Priorities of maintenance and movement.
- ___ Reconstitution requirements for the next phase of the operation.
- ___ Obstacle and barrier plans. Friendly FASCAM (family of scatterable mines) usage and affected areas. (You may have to traffic this same area later.)
- ___ Barrier material requirements.
- ___ Required supply rate development factors. What quantities and types of ammunition were fired?
- ___ Were there any preparatory fires? Pre-positioning of ammunition may be in order.
- ___ Casualty evacuation plan.
- ___ Mortuary affairs plan.
- ___ Enemy prisoner of war and civilian refugee requirements.
- ___ Deception plan and impact on logistics.
- ___ Force protection plan for the rear area.
 - ___ Rear area fires and control.
 - ___ Reconnaissance and security plans.
 - ___ Named areas of interest for the rear area.
 - ___ Rear area air defense plans.
 - ___ Bypass criteria and impact on rear area.
 - ___ Critical protection points and high-value targets in the rear.
 - ___ Decision points.

interests in mind. The logistics planner normally is located in the division main command post. On many occasions, the logistics planner is the only representative of the rear area in the planning process. Therefore, it is essential for logistics planners to be prepared to wargame the entire rear operations spectrum. This includes security of the rear area, terrain management, movements, and sustainment operations.

Wargaming is actually an element of COA analysis in the MDMP. But an adequate COA analysis is only as good as the staff input and the resulting output, or COA products. FM 101-5 fully describes the input and output of COA analysis (wargaming).

What does this mean to logisticians? Wargaming synchronizes sustainment with the operation concept. The main input from the logistician is based on a complete and comprehensive mission analysis. The logistics planner must have a combat service support (CSS) plan for the COA before he attends the G3 wargame. The CSS plan should support any COA and should require only small changes during the actual wargame. In most instances, CSS actions need to be placed into motion upon reaching decision points (trigger points) because of the lead time they require.

A senior observer for the Battle Command Training Program frequently has said, "The logistician draws the line that the tactician dares not cross." Unfortunately, logistics planners are rarely prepared to draw that line. The logistics estimate provides the basis for the wargame. Thorough estimates provide the information needed for effective wargaming participation.

Regrettably, planners typically do not have thorough estimates going into the wargame. Estimates should include—

- Unit capabilities versus unit requirements and any identified unit shortfalls.
- Planning down two levels; i.e., division to battalion.
- Personnel and class VII (major end items) replacement flow.
- Host and foreign nation support.
- Road and rail networks.
- Airlift, airdrop, and airfield capabilities and availability.
- Water locations for reverse osmosis water purification unit operations.
- Nuclear, biological, and chemical decontamination sites.

FM 101-5 lists the eight doctrinal wargaming steps. Logistics planners must ensure that each of these steps is considered and used in the wargaming process. (See page 5.)

Wargaming is indeed personality driven. Many times the wargame leader does not want the logistics planner to take an integral part in the wargame planning process. Therefore, once the logistician has prepared fully

for the wargame, he must be tenacious, diligent, and professionally ruthless.

Logisticians can be most effective by ensuring that all logistics and synchronization issues are met. If the logistician is fully prepared and has the tools available, he can contribute immeasurably to the process. For example, loss estimates are critical to a wargame. Do the G3's losses track with those of the logistics estimate? If not, the logistician must inform the wargamer of the difference, and the estimate should be adjusted accordingly.

Throughout the wargame, planners identify specific tasks that must be performed by certain times to ensure mission accomplishment. The advantages and disadvantages of each COA will become apparent during the wargame. Logistics estimates require continuous updating throughout the MDMP to remain valid and viable.

Post Wargame Products

Several products result from the wargame process. The logistician should be aware of these products to maximize his effectiveness in supporting the maneuver commander. The checklist on page 6 will assist logisticians in preparing post wargame products.

G4 Backbrief

After completing the analysis and post wargame products, the logistician is prepared to demonstrate how the support concept will meet the commander's intent. But the logistician's job is not yet complete.

Logisticians should conduct parallel planning with subordinate and higher headquarters' planners. Often the division support command (DISCOM) commander is the last one to see the plan. This is a recipe for failure. It is also a good indication that the DISCOM planners have not been involved in the planning process. The G4 planner cannot do the planning alone. The DISCOM planners must be involved from the start of the MDMP and must backbrief the DISCOM commander as appropriate.

Bosnia: A Practical Application

The wargaming process is not limited to combat operations. Logistics planners engaged in peacekeeping operations in Bosnia have learned the need to synchronize G3 operational plans with the support concept on a daily basis.

The 1st Cavalry Division presently is ensuring compliance with the Dayton Peace Accords. Part of that agreement calls for a binding arbitration decision on which of the three former warring factions would control the city of Brcko. The decision was announced recently that the city would be a neutral district not controlled by any one faction. The 1st Cavalry Division is responsible for ensuring that this decision is imple-

mented. To do so, the division required plans to support contingency operations and wargaming of the logistics requirements for the operation.

The typical combat operations wargame process takes into consideration the battlefield operating systems, including the deep, close, and rear area operational requirements. But in operations other than war, especially in the peacekeeping operations in Bosnia, logisticians also must consider other aspects of the synchronization matrix. One example would be information operations (IO), which are key players in ensuring that factual information is disseminated. Thus, instead of fire support, the logistician takes IO operations in a peacekeeping environment into consideration. High-value targets must be identified using a high-value target list and attack matrix.

Radio Mir, an Army-operated radio station near Brcko, played a key role in the successful Brcko IO campaign. However, the station required significant equipment upgrades before it was able to accomplish its intended mission of providing the local populace with accurate information. The G4 was responsible for ensuring that the required equipment got to the right location at the right time to support the IO operation. Logisticians played a key role in making that happen.

Planning considerations for supporting the arbitration decision included ordering food, water, and fuel to increase base camp stockage. The need to pre-position ammunition and rig sling loads also was identified during the wargaming process. Likewise, the development of the CSS synchronization matrix, the logistics estimate, an analysis of assets required versus what was actually on hand, routes and alternate routes, and movement options if roads were blocked was facilitated by properly preparing for the wargaming process.

Another consideration in peacekeeping operations is the involvement of the staff judge advocate, who plays an important role in deciding what actions are in accordance with the General Framework for Peace Agreement that governs the conduct of military operations in Bosnia. The planner must consult with the staff judge advocate so that any legal issues affecting support to other nations are addressed early in the wargame process.

Logisticians also must take into account current missions when planning the concept of support for future missions. At the time of the Brcko decision, the 1st Cavalry Division was in the middle of a relief-in-place operation between its 1st and 2d Brigades. The crucial issue facing logisticians was whether or not there would be enough supplies and materials to support the Brcko mission as well as the relief-in-place operation. By understanding how the flow of forces worked and how forces were deploying and redeploying during the Brcko decision time period, the 1st Cavalry logisticians were

able to focus their efforts on determining realistic support capabilities for both missions.

Ultimately, the concept of support addressed additional housing, the transportation and movement of key civilians if the situation became unstable, food, water, fuel, alternate route identification, cots, sleeping bags, and sanitation facilities. Fortunately, the G3 planners in the 1st Cavalry Division do listen to what their logisticians have to say. They consider logisticians to be an integral part of the planning process. The staff works hand-in-hand to ensure that logistics requirements are synchronized to every operation.

Having the proper tools for wargaming makes the process less tedious. Logistics planners can play an integral role in the success of effective operation plans by using the methods and tools described in this article. Be prepared and get the answers your boss deserves and the maneuver commander requires to accomplish their missions.

ALOG

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A Unique Support Unit in Italy

by Colonel Charles A. Munson

Within the European theater, the Army uses some unique organizations. One is the 22d Area Support Group (ASG), an operational area support group based in Italy. Although there are two other operational ASG's in U.S. Army, Europe (USAREUR), several factors make the 22d ASG different. Let me introduce you to the 22d ASG, explain its unique features, show how it supports USAREUR and the U.S. European Command (USEUCOM), and discuss how it trains.

ASG's are forward-deployed garrisons. They are organized under a modification table of organization and equipment, supplemented by a table of distribution and allowances (TDA). Every ASG supports its assigned installations with a set of basic services and functions. USAREUR's Quality of Life Standards establish the minimum level of support required at each installation. At the same time, each ASG delivers support differently. The TDA gives the ASG organization the flexibility to modify its structure easily and provide resources for the support it delivers to its installations and customers.

Normally, an area support team (AST) supports each installation. AST's are organized under a base support battalion (BSB), which in turn is subordinate to an ASG. ASG's are organized under USAREUR headquarters.

The ASG is the resource manager in this hierarchy, providing funding, policy, planning, and direction. The BSB is the operator, delivering installation support through its subordinate AST's.

So what is an "operational" ASG? An operational ASG, such as the 22d ASG, consists of a BSB-type structure supplemented by additional personnel needed to perform the policy, direction, and general supervisory functions of an ASG. Simply put, an operational ASG is an ASG without any subordinate BSB's. The operational ASG must perform all of the functions of an ASG as well as directly deliver installation support.

ASG for Southern Europe

The 22d ASG is the only ASG in southern Europe. Located in the northern Italian city of Vicenza, its area of responsibility extends across all of Italy. Over 600 miles separate its northernmost unit at Aviano Air Base from its southernmost installation, AST-Brindisi. The 22d also supports offshore organizations in Turkey and the Middle East.

The three things that make the 22d ASG unique are its location, organization, and mission. Because it is the only Army organization south of the Alps with a base



□ Members of the 22d Area Support Group's departure airfield control group at Aviano Air Base, Italy, help a C-17 crew load a pallet bound for Brazzaville, Congo, in support of a SETAF deployment.

support mission, the 22d ASG, along with its senior headquarters, the Southern European Task Force (SETAF), must interact with the Italian Government on all levels. At the national level, the 22d ASG works through the U.S. Embassy in Rome to clarify the implementation of the Status of Forces Agreement and its associated technical agreements and conditions of employment for hiring local national employees. The ASG also works through the Italian Defense General Staff and Italian Army Staff to gain approval for construction and renovation projects. At the regional and local levels, the ASG works to ensure the availability of regional and local Italian training areas and facilities and compliance with Italian safety and environmental laws. At the local level, the ASG works directly with the assigned Italian base commander (an Italian Army colonel), local police, emergency services providers, and government utilities.

The internal organization of the 22d ASG also makes it unique. It is the only operational ASG to which tactical units are assigned. They include the 24th Quartermaster Company (Aerial Delivery); the 13th Military Police Company; the Headquarters and Headquarters Company, 22d ASG; and the 28th Independent Transportation Platoon (Medium Truck). These units provide combat support and combat service support to SETAF and tenant units stationed in northern Italy. Because of these units, the 22d has both tactical and base operations (BASOPS) missions.

Finally, the 22d ASG, unlike the other USAREUR ASG's, is directly subordinate to its major supported tenant and senior tactical headquarters in Italy, SETAF. It is one of two brigade-sized units in SETAF. As such, it functions as SETAF's tailored support command, and its mission is directly influenced by the SETAF mission. The 22d's mission can be boiled down to three basic tasks: deployment support, force protection, and BASOPS support. Because SETAF often functions as a joint task force (JTF) headquarters and its assigned infantry brigade (the Lion Brigade) contains an airborne infantry combat team, the 22d routinely helps deploy and recover those tactical units. Deployment support is the ASG's primary tactical mission.

SETAF can operate as a rapidly deployable JTF headquarters or Army force (ARFOR) headquarters. The Lion Brigade may function as an ARFOR headquarters within a JTF or as a rapidly deployable brigade headquarters, with the 1-508th Airborne Battalion Combat Team as its rapid deployment, initial entry combat force. In short, the SETAF units comprise a USEUCOM and USAREUR quick-response force. In the recent past, these forces have been employed in many situations. They have conducted peace operations; they were the first force deployed to the Tuzla airport in Bosnia, which they secured; and they have been used in noncombatant

evacuation operations (Liberia), humanitarian relief operations (Rwanda), and security operations (at the crash site of Secretary of Commerce Ron Brown's jet in Croatia). In each case, the ability of the force to reach its target area quickly was crucial, and the 22d ASG was required to deploy the initial forces in less than 24 hours.

Training to Support Deployments

Deployment support is a mission that requires constant preparation. While the ASG is deploying forces, it also must activate its family assistance center (FAC), as well as family support groups (FSG's) for individual units. All of this is linked to the mission-essential task list (METL) task of force protection. All actions are sequenced and codified in both the ASG's and SETAF's standing operating procedures (SOP's). The ASG exercises its deployment support capability monthly.

The 22d ASG trains for its deployment support mission just as any other unit does for its mission. Its training cycle consists of assessment, planning, and execution. Both SETAF and the ASG assess the ASG's ability to deploy the force. This is done at least quarterly, using the Lion Brigade's quarterly mass tactical jumps as the assessment exercise. This exercise consists of moving at least 450 soldiers to the airfield and rigging and then dropping 12 heavy loads. The airfield is located over 90 kilometers to the north, and convoy driving time between the airfield and the garrison is 2 hours. The exercise stresses the ASG's deployment organization because it requires moving both personnel and cargo to the airfield. This quarterly training exercise gives commanders a viable assessment of the ASG's training status. The ASG's deployment capability also is certified annually by USAREUR, usually during the Agile Lion exercises.

In training the ASG's personnel and teams to execute the deployment mission, the traditional training tools, methods, and techniques are used. Individual and small-team training focus on military occupational specialty and individual skills. Training and assessment are conducted during sergeant's time training and normal mission work. Collective teaming skills require constant training. Communications and information systems are exercised continually, and reporting procedures are refined. Rock drills, terrain walks, and modified training exercises without troops are used to train and rehearse the command and control and information systems. All of this training leads to, and is combined in, a quarterly mass tactical deployment of the Lion Brigade.

Supporting Soldiers and Their Families

The activation of the FAC and FSG's is synchronized with the deployment schedule. The ASG therefore trains for those activations as well. FSG's and the rear detachment commanders are assembled and briefed. The



□ SETAF airborne troops like the ones pictured here in Northern Italy need the support of the 22d Area Support Group to deploy.

FAC is activated and manned by all the family support services agencies on the installation. These civilian volunteer agencies are trained using the traditional techniques, with one exception—civilian role-playing. It is difficult to develop SOP's that address all of the diverse situations that can face these agencies. So role-playing is used to re-create previously encountered problems and provide a basis on which the agencies can define problems and develop solutions.

Training for these family support functions is designed and conducted to meet the particular needs of the activities involved. For example, FSG's and rear detachment commanders are trained together. In a real deployment, they will team and care for the families of the deployed soldiers. Training consists of an initial training package presented in a classroom over 2 days. Sustainment training is conducted during each unit's FSG meetings, which usually are held every other month (more frequently if needed).

Role-playing to train the personnel manning the FAC occurs semiannually. The diversity of the problems presented and the use of multiple languages challenge the problem-resolution and linguistic skills of the FAC's staff. The exercise usually is conducted in a minimum of three languages: English, Italian, and French or Korean. The FAC is certified by USAREUR once a year during SETAF's annual certification exercise as a JTF headquarters.

The final piece of the family support mission is to

prepare the soldier and family for their reunion. This includes classes for both the family and the soldier. A welcome-home social function, usually hosted by the unit FSG, is part of the program. Training for this portion of the mission is done during FSG meetings for the families and through professional development classes for the soldiers. The ASG and FAC have published a how-to manual for FSG's to use as they plan their reunions. This mission is exercised and assessed at the end of every major deployment.

An operational ASG is certainly an unusual organization in today's Army. The 22d ASG is a unique operational ASG that is responsible for supporting the deployment of USAREUR's rapid reaction forces. The training to meet that mission and its demanding timeline is challenging. A vigorous traditional training program, coupled with a continual assessment process, keeps the 22d ASG ready to validate its motto, "Support to Win."

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Managing Hazardous Substances at the Installation or Depot

by Dave Lyon and Gary Voss

A 1995 memorandum co-signed by the Army Deputy Chief of Staff for Logistics and the Assistant Chief of Staff for Installation Management declared that the Army's environmental activities are inextricably linked to readiness. The same memorandum predicted that environmentally oriented business practices would be most successful at installations, depots, and industrial activities. Just over 3 years later, both statements have been validated.

A combination of developments is responsible. The first is the Assistant Chief of Staff for Installation Management's aggressive fielding of the Hazardous Substance Management System (HSMS), the Department of Defense standard automated tracking and reporting application for environmentally harmful materials. The HSMS also is used to formally account for hazardous materials (HM) at the installation or depot. Support for the system is provided by the Army Environmental Center, the Project Office for HSMS, and teams of contractor personnel.

The second development is improved coordination among the traditionally stovepiped approaches to environmental issues at Headquarters, Department of the Army (HQDA), and the major Army commands (MACOM's). At HQDA, the improved coordination is reflected in the recently expanded section on hazardous material management in Army Regulation 710-2, Inventory Management Supply Policy Below the Wholesale Level; the execution of jointly signed memoranda of agreement for the fielding of HSMS; and the formation of a Hazardous Material Management Program Council of Colonels at the DA level. At the

MACOM's, improved coordination is readily apparent among the logisticians, engineers, and environmentalists who must cooperate for successful integration of readiness programs.

The final and most important factor is the innovative efforts of installation and depot staffs, who consistently find more efficient and effective ways to do business. The purpose of this article is to highlight one of these successful hazardous material management efforts at Detroit Arsenal.

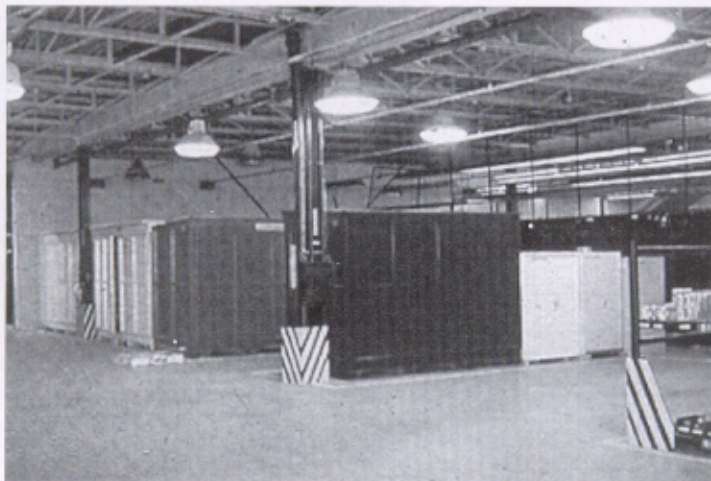
Detroit Arsenal Background

Detroit Arsenal is an Army Materiel Command (AMC) installation located in Warren, Michigan, just a few miles north of Detroit. By Army standards, Detroit Arsenal is small, consisting of 25 buildings and building complexes. The primary activity at the arsenal is the Tank-automotive and Armaments Command (TACOM), which carries out research, development, test, and evaluation missions.

An Idea With Merit

Looking to streamline supply operations, reduce waste, and lower costs, the

logistics staff at Detroit Arsenal became aware of the Army's push toward centralized management of hazardous materials. For an industrial operation with activities located close together, this concept was particularly appealing. The availability of an automated tracking and management system (the HSMS) to control the life-cycle management of all hazardous materials used at the installation was an added plus. With the support of the TACOM Commander, Detroit Arsenal



□ Hazardous materials are ordered, stored, distributed, and tracked from this centralized storage facility at Detroit Arsenal.

decided to implement a project that would track, control, and manage all hazardous materials used on the installation. The fully functional program would serve as a model for other TACOM installations.

Program Implementation

Before undertaking this effort, the leaders at the arsenal built an implementation strategy. They knew that the program would succeed if they involved all personnel and instilled their confidence in the HSMS. The implementation team planned an educational program to show employees what the HSMS could do to enhance their day-to-day work. The team relied on a user-friendly computer interface with the arsenal's Hazardous Material Control Center (HMCC), using the familiar automated tools already available to reduce the learning curve for material procurement, issue, use, and disposal. A biweekly newsletter was provided to each customer during the implementation process. The newsletter informed employees of the implementation progress, system updates, and system interaction and provided a forum for customers and the implementation team to exchange ideas.

The interaction between the customers and the HMCC allowed a timely and customer-oriented transition. Customers realized a greater benefit than just the control and management aspect. They no longer had to prepare documentation to purchase their materials, pick up the items, or prepare disposal documentation for their waste material. The system did these tedious tasks for them and enabled customers to perform their missions more efficiently.

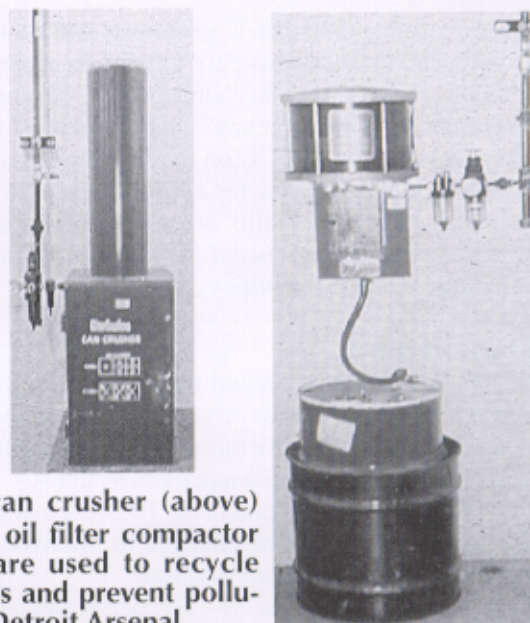
Detroit Arsenal established an HSMS implementation work group comprised of representatives from the Safety Office, base operations contractor, Environmental Management Office, and Directorate of Installation Services. The first order of business for the team was to formulate a charter and have it approved by the installation manager.

Next, the group established goals and business practices that would be instrumental in the success of the program. The goals for implementation were—

- Provide a tool that would allow facility personnel to help in the management of hazardous materials.
- Provide a mechanism for accessing inventory information.
- Increase the accuracy of regulatory reports.
- Reduce redundancy and required inventory.
- Reduce the labor required for regulatory reporting and inventory management.
- Establish a centralized facility to manage hazardous materials.

The revised business practices included the following—

- Order, distribute, and manage all HM from a central facility to minimize the quantity of hazardous materials



□ The can crusher (above) and the oil filter compactor (right) are used to recycle materials and prevent pollution at Detroit Arsenal.

materials entering the installation.

- Allow customers to order by unit-of-use rather than unit-of-issue. For example, this would allow HM to be dispensed by cans as opposed to cases.
- Establish reuse procedures that allow customers to return unused quantities of HM for free redistribution to other customers.
- Establish an authorized user/use list (AUL) to determine which HM may be used at designated locations or for specified applications.
- Implement an automated tracking system to follow the life cycle of HM as they enter the installation and are consumed or disposed of.
- Establish inventory levels at user locations to meet demands without keeping excess HM on site.
- Implement an HM training and awareness program for the benefit of all participating employees.
- Deliver HM from the central issue facility to the individual work sites.

Challenges

Unexpected changes in local procurement procedures created a significant challenge during the implementation process. Detroit Arsenal moved to a just-in-time procurement procedure to purchase HM. This change was accomplished with two goals in mind: first, to reduce the labor and cost of purchasing materials; and second, to reduce the quantities of materials stored on site. These goals were accomplished through just-in-time supply contracts with local vendors. In the end, the new procedures worked to the advantage of the implementation team.

A second challenge was to control the unauthorized use of purchase cards to buy HM. Under the adopted

business rules, the HMCC personnel are the only individuals authorized to procure hazardous materials with a credit card, unless an "emergency" procurement is necessary. An "emergency" procurement of HM must be reported to the HMCC on the first business day after the emergency purchase for accountability and tracking purposes. Periodic audits of credit card accounts and storage areas are conducted throughout the year to ensure adherence to the policy.

Lessons Learned

Valuable lessons learned throughout the implementation process at Detroit Arsenal can be applied to any Federal facility implementing an automated hazardous material tracking and management system—

- Change business practices. Existing business practices and policies can be changed to improve the management of HM on an installation.
- Listen to the end users. The personnel who will be actually using the HSMS program on a daily basis can provide valuable feedback on how the system works in the "real world."
- Be flexible. Detroit Arsenal found that a flexible approach to issues and challenges improved implementation.

For more information on handling hazardous substances at an installation or depot, call:

**Army Office of the Deputy Chief of Staff for
Logistics—Supply Policy Division
(703) 614-6760, DSN 224-6760**

**Army Office of the Assistant Chief of Staff for
Installation Management
(703) 693-0549, DSN 223-0549**

**Detroit Arsenal
Logistics Management Division
(810) 574-5167, DSN 786-5167**

**Detroit Arsenal
Directorate of Installation Services
(810) 574-6615, DSN 786-6615**

**Army Environmental Center
Hazardous Substance Management System
(410) 436-1215, DSN 584-1215**

- Continuously improve the process. Implementation and maintenance of a centrally managed HM program is a continuous improvement process rather than a fix-and-forget process.

- Work closely with your contractors. Listen to their suggestions, even if they deviate from your original methodology. The implementation of HSMS can be a well-orchestrated transition if everyone concerned has an open mind and is willing to adapt. Detroit Arsenal was fortunate to work with a superior contractor, which allowed it to bring HSMS to full operational capability in about 10 months.

- Stay focused. Implementing an automated tracking and management system is time consuming and very wearing on both the personnel installing the system and the customers who will be using the program. Those who are focused on the goals for the centralized program create success.

Detroit Arsenal successfully overcame all obstacles associated with the implementation process, to include pushing the HSMS system to the edge of its envelope by using the system as a potential accounting program. HSMS is not intended to be an accounting program, but rather a tracking, control, and management tool. However, with the expertise of our data base administrator and with the assistance of our implementation contractor, we were able to track costs for each business center and report this information to the budget control manager for check and balance purposes. Once this function has reliable historical accountability, Detroit Arsenal will submit a system change request (SCR) to be incorporated for all HSMS users.

Throughout the 10-month implementation process, the newly established business practices for HM at Detroit Arsenal became more and more effective, fulfilling its vision and enhancing the mission. Arsenal personnel became more aware of how the installation could save precious revenue and reduce employees' exposure to health and safety risks. The benefits of the program will continue in the years ahead. **ALOG**

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Gary Voss is an environmental protection specialist for the Directorate of Installation Services at Detroit Arsenal, Michigan. He currently is completing the requirements for a degree in environmental engineering.

Environmentally Sustainable Operations

by Colonel Victoria Revilla and Philip E. Prisco

In 1962, Rachel Carson's book, *Silent Spring*, awakened the American people to the pollution of their environment. As a result, the Federal, state, and local governments began to adopt environmental legislation. The volume of this legislation has increased dramatically over the years. The general population now has taken up concerns that originated with special-interest groups.

Initially, Federal agencies, including the Army, were protected from environmental lawsuits by sovereign immunity. As public interest increased, changes in legislation virtually eliminated any protection of Federal civilian and military personnel responsible for environmental pollution. Where the law has not changed, executive orders have extended the coverage of existing law to the Federal sector. Sustainable management of our natural resources is not only a legal imperative; in the long run, it is financially advantageous to Army organizations because restoration measures have become lengthy and expensive.

In the 1980's and early 1990's, military installations increased their environmental staffs and fenced funding for environmental projects. As a result, some installations passed all environmental issues to their environmental offices for resolution. Only now are we seeing individual organizations take charge of their own environmental responsibilities. The trainers have taken charge of the Army's Integrated Training Area Management Program, and the logistics community is now taking ownership of its Hazardous Material (HM) Management Program.

Beginning in 1995, the Army Training and Doctrine Command (TRADOC) began a program with the Army Environmental Center to establish HM centers on its installations. Three installations—Fort Benning, Georgia; Fort Bliss, Texas; and Fort Knox, Kentucky—were selected to develop pilot programs for establishing centralized control of HM. In 1997, Headquarters, TRADOC, organized its logisticians, environmentalists, and engineers into a partnership, led by the Director of Logistics/G4. This team approach focused the disciplines and expertise needed to develop HM programs and maximized assistance and direction to other installations.

Because it is costly to establish and staff separate control facilities, TRADOC is using an automated tracking system that incorporates the Hazardous Substance Management System and the Standard Army Retail

Supply System to centralize visibility and management of existing routine HM management functions, placing emphasis on minimizing HM products through use of substitutes. Initial results are very positive. Installations are moving excess HM from unit excess lists to needy customers before the expiration date, thereby saving hazardous waste disposal costs. Fort Benning alone has saved approximately \$2 million in hazardous waste disposal costs.

The pattern continues in the munitions area. The Environmental Protection Agency's (EPA's) military munitions rule offers new challenges to how we manage. When the EPA military rule is adopted by state legislation, installations will have an exemption to the extensive requirements of the Resource Conservation and Recovery Act. The exemption is conditional to the management requirements in the military munitions rule.

The message is clear. Environmental requirements are increasing and will become "show stoppers" when resisted or ignored. Business practices must change, and environmental considerations must be incorporated in all operational plans. The best approach is to form a team of advisors headed by the proponent to institute management revisions aggressively and to communicate with and train operators. The environmental coordinator also must continue to provide oversight. When the proponent embraces his legal responsibilities, the environmental coordinator truly becomes an honest broker, mentor, and advisor—a needed presence in the ever-increasing complexity of our modern world.

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Logisticians and Contractors Team for LOGCAP Exercise

by Major Virginia H. Ezell, USAR

From 19 to 23 July, the Army Materiel Command conducted its first LOGCAP Warfighter exercise at Carlisle Barracks, Pennsylvania. LOGCAP is the Army's Logistics Civil Augmentation Program, and the Warfighter tested the capabilities of the people and units tasked to run it. Participants included the primary LOGCAP leaders; reservists from the LOGCAP Support Unit; personnel from the current prime LOGCAP contractor, DynCorp; the 21st Theater Support Command in Germany; the Logistics Support Element-Europe; the Army Combined Arms Center at Fort Leavenworth, Kansas; U.S. Atlantic Command; U.S. Central Command; and Headquarters, Department of the Army. Many of the Army's most experienced logisticians who were involved in contingency operations from Somalia to Bosnia were brought in to share their knowledge and expertise and act as players in the exercise. Representatives from the Australian Army and Canada's defense forces also were on hand, partly as participants and partly as observers. Both countries are in the early stages of setting up their own logistics civil augmentation programs.

In the tradition of combat arms warfighter exercises, the LOGCAP Warfighter '99 was designed to overtax the players. The exercise scenario was providing assistance to a fictitious country in Africa just recovering from the effects of a protracted civil war. Much of the country's economic and transportation infrastructure had been destroyed through neglect or battle damage. The United States and several allied countries, including Australia and Canada, agreed to help restore order and stability. To do that, the U.S. Government called on the Army to help the war-torn country begin to get back on its feet. U.S. troop strength for the operation was capped at 25,000; military planners decided it would take that many soldiers to restore order and stability in the country. Because the military logistics infrastructure would be hard-pressed to provide all of the support those soldiers would need, it was time to call on LOGCAP.

Changing Conditions Make LOGCAP Attractive

Contractors have been a presence on the battlefield since the beginning of organized armies. In the United States, General George Washington used contractors to



□ Brigadier General John J. Deyermond, Army Materiel Command Deputy Chief of Staff for Logistics and Operations, led the LOGCAP Warfighter '99 after-action review.

supply rations and equipment to the Continental Army during the Revolutionary War. Things have not changed much since then. However, while there has been a formal mechanism to call on civilian logistics contractors for support, until recently commanders have hesitated to use that option.

Beginning with Operations Desert Shield and Desert Storm, and continuing through this decade, the U.S. military has faced challenges that have strained its internal logistics infrastructure severely. Contractors proved indispensable in supporting U.S. operations during the Gulf War. The military drawdown that came after the Gulf War, combined with applications of military power to support shifts in U.S. foreign policy after the Cold War, have added a new dimension to the problem of logistics support. One answer for the Army lay in LOGCAP.

Another major factor that has increased the Army's reliance on civilian support in this decade has been the introduction of limits on the number of soldiers the United States commits to international humanitarian, peacekeeping, and peacemaking missions in Africa, Europe, and Latin America. To maximize the military capabilities of their contingency forces, U.S. military planners saw the potential of using civilian contractors to provide logistics support. Although they are an essential element of the operation, civilians are not counted as part of the military force and thus can be accommodated under limits to military personnel.

The framework for calling on civilian contract logisticians has existed since the mid-1980's. One of the lessons learned from Desert Storm was the need to establish a standing umbrella contract that is readily available to Army commanders. Yet most of those involved in LOGCAP contend that the program really began with the military operations in Somalia, when Army commanders turned to civilian companies for logistics support traditionally supplied by their own combat service support organizations. LOGCAP has evolved through lessons learned during the Gulf War and contingency operations in Somalia, Haiti, and Bosnia.

LOGCAP's Growing Importance

The U.S. military calls on its civilian logistics support contingent for everything from food and showers to postal services. These civilians may be the first ones deployed in an area of operations. They can set up base camps, receive and process soldiers as they begin to arrive, and reverse the process when the soldiers go home. They can set up supply operations, run laundries, maintain latrines and showers, and feed soldiers. They can run post offices and pay facilities. While contractors have been supplying many of these services to soldiers in every contingency since the Gulf War, their success has depended as much on the ingenuity of the command-

ers and contractors in the field as on the formal regulations governing contractor logisticians.

In an attempt to institutionalize the LOGCAP process and prevent the need to "re-invent the wheel" for every new mission, the Army set up a program office within the Army Materiel Command, Program Manager LOGCAP, to coordinate the integration of contract logistics support. A new Army Reserve unit, the Logistics Support Unit, also was created to provide a readily deployable team that would assist commanders in managing a LOGCAP deployment. Regulations and methodology were established to clarify how the program would be run.

LOGCAP Warfighter '99 was the first time that the Army had attempted to test contractor and military logisticians in an exercise scenario. Participants with real-life experience in operations similar to those in the exercise scenario said it was very realistic. The diversity of the units' missions, including engineers, combat arms, logisticians, and foreign forces, as well as inputs from United Nations and host nation officials, helped to complicate coordination and communications among the various players. Participants identified both as key elements contributing to the success of the exercise as a test of LOGCAP.

At the close of the LOGCAP Warfighter '99 exercise, General John G. Coburn, the Commanding General of the Army Materiel Command, told the participants, "Logistics is the first battle, and LOGCAP is a subset of the logistics battle. LOGCAP is important because the Army has changed. It is now a force-projection Army. Those differences require different ways of thinking, using support from the contractors in ways we never thought of before. LOGCAP was born in the first place because we had a cap on troop strength. This is the way we will fight as forces get smaller. The notion of LOGCAP becomes ever more important. It is our future. This is the way we are going to do logistics as more Bosnias, Haitis, and Somalias are bound to happen." The LOGCAP Warfighter '99 exercise demonstrated the truth of those words.

ALOG

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Using Third-Party Logistics Companies

by Major Sylvester H. Brown, USAR

Commercial companies are playing a growing role in managing the Army's supply chain.

The author offers some ideas on how best to use them in a theater of operations, particularly when the risks are high.

One important trend in Army logistics today is the increasing use of third-party logistics companies to assist in distributing goods to installations in the continental United States (CONUS) and overseas. This trend also is evident in the rest of the Department of Defense. The Defense Logistics Agency (DLA) and the Army Materiel Command (AMC) both use third-party logistics companies as primary sources of support to deliver items to military installations in CONUS and to parts of the world where there is no conflict. The U.S. Transportation Command (USTRANSCOM) uses third-party logistics companies to move items throughout CONUS and to overseas airports and seaports of debarkation. As the Army's force structure continues to shrink and the demand for force projection and sustainment rises, the use of third-party logistics companies will only grow.

What do we mean by a third-party logistics company? A third-party logistics company is a private firm that provides logistics services under a contract to a primary manufacturer, vendor, or user of a product or service. It is called third-party because the logistics provider does not own the product but participates in the supply chain at points between the manufacturer and the user of a given product. The third-party logistics company can perform any or all logistics functions that exist between the manufacturer and the user, including—

- Warehouse management.

- Inventory control.
- Inventory forecasting.
- Distribution management.
- Inventory scheduling.
- Order fulfillment.
- Supply-chain management.
- Client invoicing.
- Processing of loss and damage claims.
- Radio frequency (RF) tag tracking.
- Bar code tracking.
- Handheld keypad tracking.
- Repackaging and relabeling of shipments.
- Information technology support.
- Motor transport.
- Rail transport.
- Ocean cargo transport.
- Air transport.
- Shipment consolidation.
- Product return and retrograde.

As Army logistics evolves into an anticipatory, distribution-based system, we must assess the full implications of using third-party logistics companies. Such an assessment will help us to integrate and leverage the Army's organic capabilities with those of third-party logistics companies to enhance supply chain management in peace and war. In performing the assessment, we need to consider several issues that will help us to antici-

pate what classes of supply may be delivered to what points in the distribution supply chain by third-party logistics companies and under what conditions.

Supply Chain Distribution Framework

As a general rule, approximately 90 percent of all supplies move to overseas locations by ship. Supplies that go by air are usually small items with a high priority; they generally are classes I (subsistence), II (clothing and individual equipment), packaged III (petroleum, oils, and lubricants), VI (personal demand items), VIII (medical materiel), and IX (repair parts and components).

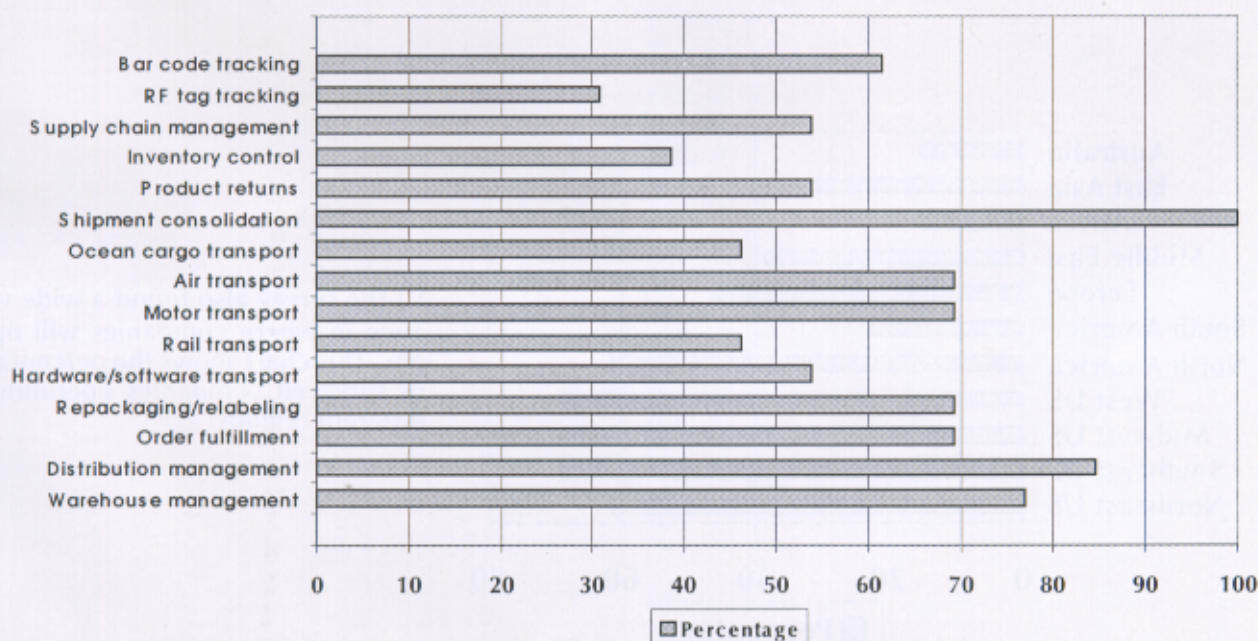
The use of third-party logistics companies continues to increase in the commercial sector as well as in the military. Today, there are approximately 500 third-party logistics companies in the United States. More and more businesses are finding it cost effective to outsource certain logistics functions while concentrating on their core business functions. According to T.B. Gooley, "In the United States, the story of third-party logistics is still a work in progress. More and more companies are entering the field, and a growing number of manufacturers are giving third-party services a try." In a reflection of this growth, DLA and AMC activities and depots have established habitual relationships with several third-party logistics companies at many locations. For example, computer terminals of three different third-party logis-

tics companies are located at Defense Supply Center Richmond (DSCR), Virginia, to handle the cargo movements scheduled for each day. DSCR uses military transportation as the exception, not the rule.

Limits to Using Companies

Just as business has capitalized on the advantages of outsourcing logistics functions in their quest to achieve just-in-time delivery, the military is adopting many of the same principles and tools, though with some differences. Unlike business, profit margin is not the military's primary concern. Army logisticians must be able to support the warfighter under all conditions anywhere in the world and must take risks that no third-party logistics company is required to take. The Army Combined Arms Support Command (CASCOM), at Fort Lee, Virginia, issued a white paper titled "Contractors on the Battlefield" (dated 19 February 1998), which summarizes the differing roles of military units and civilian contractors—

Contractors do not replace force structure. They augment Army capabilities and provide an additional option for meeting support requirements. To the extent they are used, they will be incorporated into the force structure as force multipliers, but they will not displace military assets within that force structure.



□ According to the author's survey of third-party logistics companies, not all providers perform all logistics functions. Above are the percentages of companies performing specific functions.

I conducted a survey of randomly selected third-party logistics companies in October 1998, in which I asked if they would consider providing third-party logistics services for the Army in an area of deployment (including potentially hostile areas). Only 15.4 percent of the companies said yes. Another 15.4 percent said they were interested in the proposition, 30.8 percent said they were not sure of their response, and 38.5 percent said no, they definitely were not interested. (Figures are rounded.)

Most third-party logistics companies do not operate overseas, or they do not wish to risk any hostilities. One company's representative remarked, "We would not support endangering our employees for any reason. We maintain high-quality facilities with a quality work environment. This would negate our duty to our employees." Another company—one that was willing to support military operations in a deployed area, if the money was right—did caution that their management would monitor the risk and reserve the right to discontinue support if employees were endangered to an undesirable degree.

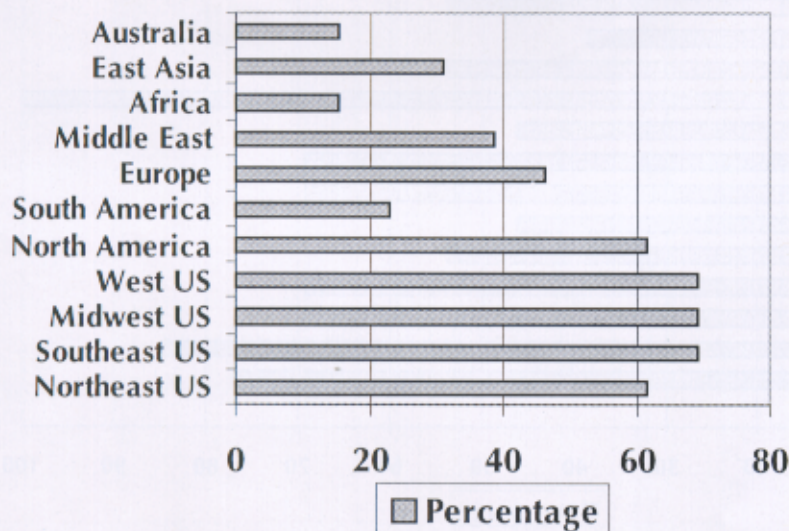
Evidently, third-party logistics companies can never replace force structure. They *can* provide logistics capability to increase the Army's ability to support the warfighter during a given operation. When commanders solicit the support of third-party logistics companies, they must consider the capabilities and reliability of those companies and the potential risks to their employees.

Selecting and Employing Third-Party Companies

All military agencies involved in supply-chain management must determine which third-party logistics companies to hire as well as how and where to employ them. During the selection process, logisticians must consider the military factors of METT-TC (mission, enemy, troops, terrain, time, and civilians), the capabilities and reliability of third-party logistics companies, and the costs of using them; logisticians also must assess risks and determine threat conditions. Analysis of METT-TC will help us determine what and where our logistics requirements are lacking. To ensure continuity in the flow of supplies and information about those supplies, each agency must understand its link in the total supply-chain management system.

Once an agency knows the logistics functional requirements it must meet, it can solicit third-party logistics companies. Then it can compare its logistics requirements against the capabilities of responding companies to determine the suitability and feasibility of contracting with them. For example, a company with only a regional operation cannot be expected to track and deliver items to an overseas location at a competitive cost or with great reliability. The chart below depicts the percentage of the companies I surveyed that perform each logistics function. Shipment consolidation was the only logistics function performed by all companies.

DLA, AMC, and USTRANSCOM have developed



□ The survey also found a wide variance in where companies will operate. This chart shows the percentages of surveyed companies operating in different regions.

relationships with several companies that they employ during peacetime to deliver every class of supply to locations in CONUS and theaters throughout the world. The reliability of these companies is known. The Army has contingency contracts in place under the Logistics Civil Augmentation Program (LOGCAP) to augment its organic logistics support. USTRANSCOM supervises the Civil Reserve Air Fleet (CRAF) and the National Defense Reserve Fleet, which provide commercial air and maritime support during deployments to accommodate logistics surge and sustainment requirements that are beyond military allocations or capabilities. However, operation-specific contracts for third-party logistics are necessary to meet unanticipated requirements once a contingency begins.

The chart on page 20 depicts the areas in which the third-party logistics companies I surveyed operate. Approximately 17 percent of the companies provide services to all areas of the world. Some of those companies, as well as others, may participate in LOGCAP and operation-specific contracts simultaneously.

Contracts also are negotiated with host nation companies in the theater of operations. When negotiating a contract, commanders at all levels must lay out measurable performance objectives and the considerations that will govern how contractors are employed and deployed to support military operations.

The Department of the Army issued a memorandum, "Policy Memorandum—Contractors on the Battlefield" (dated 12 December 1997), that listed several considerations for contract negotiations during war and military operations other than war (MOOTW). The memorandum requires commanders to protect contractors and minimize civilian exposure to hostilities. The memorandum states, "Generally, civilian contractors will be assigned duties at Echelons-Above-Division (EAD). Should the senior military commander determine that their services are required at lower echelons, contractors may be temporarily deployed as far forward as needed, consistent with the terms of the contract and the tactical situation."

During peacetime, there are no restrictions on where contractors can be employed or what classes of supply they can handle. However, during war or MOOTW, third-party logistics providers should not deliver items forward of the corps support area unless the mission is essential and the threat is minimal. If the force structure in the theater of operations is smaller than a division, the supply support activities (SSA's) of the corps and divi-

sion or below may be collocated. In that case, third-party logistics providers should deliver supplies to the using unit's SSA. In contrast, if the theater is judged too hostile for civilians, the third-party logistics provider must deliver supplies to a designated staging area outside of the theater, where those supplies can be transferred to military assets for forward movement.

Assessing Threats to Contractors

After considering METT-TC, comparing the capabilities of third-party logistics companies to logistics requirements, determining companies' reliability, and negotiating costs, commanders must conduct risk assessments continuously in order to determine when the use of civilian contractors must be adjusted. One method of risk assessment is the use of physical security terrorist threat conditions (THREATCON's)—

THREATCON Delta. This condition applies in the immediate area of a terrorist attack or when intelligence has been received that terrorist action against a specific location or person is likely. Normally, this THREATCON is declared as a local condition.

THREATCON Charlie. This condition applies when an accident occurs or intelligence is received indicating that some form of terrorist action against personnel and facilities is imminent. Implementation of measures in this THREATCON for more than a short period probably will create hardship and affect the noncombat activities of the unit and its personnel.

THREATCON Bravo. This condition applies when an increased and more predictable threat of terrorist activity exists. The measures required under this THREATCON must be maintained for weeks without causing undue hardship, affecting operational capability, or aggravating relations with local authorities.

THREATCON Alpha. This condition applies when there is a general threat of possible terrorist activity against personnel and facilities, the nature and extent of which are unpredictable, and circumstances do not justify full implementation of THREATCON Bravo measures. The measures in this THREATCON must be maintained indefinitely.

Another method of risk assessment is found in Field Manual 100-14, Risk Management. It uses the following risk levels—

- E (extremely high): Loss of ability to accomplish the mission if hazards occur during the mission. There is a probability of frequent or likely catastrophic losses and of frequent critical losses.

- H (high): Significant degradation of mission capabilities in terms of the required mission standard, inability to accomplish all parts of the mission, or inability to complete the mission to standard if hazards occur during the mission. The probability of catastrophic loss is occasional to seldom, and the probability of critical loss is likely to occasional; there also is a probability of frequent marginal losses.

- M (moderate): Degraded mission capabilities in terms of the required mission standard if hazards occur during mission. The probability of catastrophic loss is unlikely. The probability of a critical loss is seldom, while the probability of marginal losses is likely or occasional. There is a probability of frequent negligible losses.

- L (low): Little or no impact on accomplishing the mission from expected losses. The probability of critical loss is unlikely, while that of marginal loss is seldom or unlikely. The probability of a negligible loss is likely or less than likely.

Third-party logistics contractor activity should cease if the THREATCON is greater than THREATCON Bravo. In accordance with FM 100-14, contractors should not be used if the associated risk is E or H. If contractors operate in an environment above THREATCON Bravo, unit commanders should provide them weapons for self-defense. Theater commanders are responsible for determining if and when to arm civilians. The arming of contractors should be reserved for system contractors who have technical expertise that is not easily replaceable with military capabilities and whose withdrawal will harm the conduct of military operations.

Another factor that commanders should consider before using contractors in threatening environments is communications. The use of contractors in military operations increases vulnerability because the commercial communications network is not securable and thus can be used by an enemy for information exploitation and sabotage.

Due to their vulnerability, third-party logistics providers should not be used to transport class V (ammunition) or class VII (major end items) in a hostile environment (MOOTW or war) without military escorts. When using host nation support contractors, units are more susceptible to enemy infiltration, sabotage, and terrorism. Class V and class VII items offer high-payoff targets to an enemy, with bulk class III a close third. While sustaining the force, we should take all the security precautions necessary.

Third-party logistics companies are an integral part of our supply-chain management capabilities during peace and war. They can augment military capabilities at the strategic, operational, and tactical levels. However, even

as their use continues to grow during peacetime, they will not replace the Army's force structure. Most third-party logistics companies provide only specific logistics support and will not support military operations when the risk is high or extremely high.

Before selecting a third-party logistics company, support commanders must weigh their support requirements against the company's capabilities, cost, and reliability under the conditions of the contract for contingency operations. Before using third-party logistics companies in a theater of operations during war or MOOTW, commanders (whether theater or below) must consider the factors of METT-TC and the risk to contractors on the battlefield. Military units can perform the same functions as third-party logistics companies, and those companies are very vulnerable to terrorism, sabotage, and infiltration. Therefore, third-party logistics companies should not be employed in areas of a high risk or of THREATCON Charlie or greater.

During peacetime, third-party logistics companies can deliver all classes of supply for the using unit (the division support command direct support unit) down to the lowest level SSA. But in war and MOOTW, third-party logistics should limit delivery to the SSA nearest to the using unit with a risk assessment of moderate or THREATCON Bravo or below. Additionally, military units should deliver or escort class V and VII items within the theater when hostilities exist. I believe that following such guidelines for using third-party logistics companies will ensure that such companies continue to be a vital component of the Army Logistics System. **ALOG**

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Automating Mortuary Affairs

by Commander Mario A. Catacutan, Philippine Navy

The procedures used today to process remains of deceased soldiers are essentially the same as those used during the Vietnam war.

The author suggests how current and emerging automation technologies could be used to bring mortuary affairs into the 21st century.

The mortuary affairs program is extremely important to the morale of soldiers and their families. Sensitive and proper handling of remains enhances the morale of other soldiers, and receiving the actual remains and personal effects of their loved one comforts surviving family members.

The goal of the mortuary affairs program is to recover, identify, and return the remains of U.S. military

and authorized civilian personnel from an area of operations to the continental United States (CONUS) for final disposition. It is governed by Army Regulation 638-2, Care and Disposition of Remains and Disposition of Personal Effects. The program provides peacetime and wartime support to search, recover, identify, and process the remains and personal effects of U.S. personnel who have died on the battlefield.

It is Department of Defense policy to return all service members' remains to CONUS. According to Joint Publication 4-06, Joint Tactics, Techniques, and Procedures for Mortuary Affairs in Joint Operations, cremation is not an option. Unit commanders must ensure that remains are treated with respect and dignity and must impart to their soldiers the importance of mortuary affairs operations.

Systems and technologies are available to help mortuary affairs personnel provide more efficient service to soldiers and their families. These should be adapted to meet the mortuary affairs program's needs.

Organization

The Secretary of the Army is the executive agent for the Joint Mortuary Affairs Program. The 54th Quartermaster Company at Fort Lee, Virginia, is the Army's only active-duty mortuary affairs company and normally serves as the corps collection company. It consists of five forward collection platoons, one main collection platoon, and one company headquarters platoon.

Mortuary affairs support is provided within the area of operations on an area support basis. Within the corps, all units receive support from the corps collection company.

Procedures

Mortuary affairs support begins at the tactical unit level and is the responsibility of the unit commander. Members of the team, platoon, or company recover the remains of their fallen comrades and evacuate them to the nearest collection point.

Forward collection platoons receive the remains and personal effects and perform initial identification. A collection platoon can identify up to 20 remains per day. The remains are prepared for shipping by air or surface transportation to the theater mortuary evacuation point (TMEP).

Once the remains are received at the TMEP, mortuary affairs specialists gather tentative identification information and inventory personal effects. From the TMEP, remains are evacuated as quickly as possible to the theater mortuary evacuation point. All remains are sent by air in palletized sealed transfer cases to one of two CONUS port-of-entry (POE) military mortuary facilities located at Dover Air Force Base, Delaware, and Travis Air Force Base, California.

Personnel at the POE mortuary facility positively identify the remains and prepare them for whatever final disposition the family or other authorized representative directs. Positive identification is based on a favorable comparison of ante-mortem and post-mortem identification media.

Outdated Procedures

Some areas of the existing system and procedures need improvement. The current practices are the same ones used during the Vietnam War. Remains still are being processed manually. There is no automation for documentation and recording of information. Shipping the remains presents a constant problem. Mortuary affairs units have no organic vehicles. The transportation of remains depends on the availability of space on vehicles that are returning to the rear area after delivering supplies to the battlefield. It is up to each collection point or TMEP to coordinate for transportation of deceased with the supporting transportation system. Likewise, there is no intransit visibility of the status of remains during shipment from the battlefield to CONUS.

Emerging Logistics Initiatives

In the pursuit of the Army's logistics vision, the Revolution in Military Logistics calls for fundamental changes not only in the way we think about logistics but also in how we support the Army of the 21st century in the joint arena. The use of state-of-the-art, information-age technology, source data automation, real-time situation awareness, asset visibility, assured communications, and technological breakthroughs can support logistics management. Following are some of the systems and technologies emerging to support the RML.

Global Combat Support System-Army (GCSS-Army) is designed to be the "Army's seamless, integrated, modular, and interactive combat service support information management and operations system at all force support levels." In concept, the system is designed to cut across all combat service support disciplines to include manning, arming, fixing, fueling, moving, and sustaining soldiers and their systems.

Transportation Coordinators' Automated Information for Movement System II (TC-AIMS II) is a key element in reengineering the defense transportation system into an effective, multipurpose, multiservice automated transportation support system for use at the unit and installation levels. Commanders and staffs can use it to perform the following functions: request transportation support; conduct air, sea, or rail load planning; simulate movements; track the movement of personnel and equipment; and enter critical movement management data into the strategic/joint transportation systems.

Global Transportation Network (GTN) is a command

and control information system designed to help manage worldwide transportation. GTN consists of four subsystems: current operations, future operations, patient movement, and intransit visibility. It furnishes the integrated transportation data necessary to accomplish transportation planning and maintain intransit visibility of units, passengers, and cargo during peacetime and wartime.

Force Manning System (FMS) is a personnel accounting system that provides the personnel manager at division or battalion level with tools for developing real-time personnel estimates; conducting predictive planning, and creating a unit deployment data base, unit strength summary, and mission analysis. The system supports manifesting, personnel accounting, strength management, and replacement operations as a prototype of the personnel function within the Combat Service Support Control System.

Automated Manifest System (AMS) is a Defense Logistics Agency initiative that uses laser-readable optical cards to create manifests for, and track multipack shipments from, the depot to their destinations. AMS provides "in the box" asset visibility. This system was used in Somalia and Haiti and is being used now in Bosnia.

Electronic Commerce (EC) and **Electronic Data Interchange (EDI)** are enablers that advance the technology, methods, and organizational changes necessary to conduct business electronically rather than on paper. EDI is the transfer of structured data by electronic means from one computer system to another using agreed-upon message formats. Some examples of the current technologies that are employed frequently as EC enablers include bar coding, RF tags, and optical memory cards.

An optical memory card (OMC) is a digital data product based on optical recording technology that is written and read by an optical card reader-writer connected to a personal computer. With a storage capacity equal to 1,200 typewritten pages, the OMC can store text, biometrics, schematics, pictures, voice, music, books, software, and virtually any information that can be digitized. It is an ideal storage medium for medical systems, recordkeeping systems, identification card systems, and many other applications. For extra security, it can contain many nonerasable security features, such as cryptography, access codes, digital photographs, or fingerprints.

Automating Mortuary Affairs

Considering that the systems described above are being developed and that the supporting technologies are available, the mortuary affairs program should pursue automation. A mortuary affairs system could interface with any of the logistics systems mentioned above and

be integrated with the GCSS-Army. Of the systems mentioned, AMS most closely meets the specific requirements of mortuary affairs. Mortuary affairs automation should take advantage of the machine-readable, paperless manifest. This would increase information accuracy, expedite receipt and processing of remains and personal effects, and provide a high level of intransit visibility. The automated system should be able to verify and reconcile information, interface with GTN and TC-AIMS II for transportation requirements and scheduling, and interface with FMS for personnel accounting.

The proposed system is a data base management system that combines a user friendly software package that is similar to the AMS with a state-of-the-art hardware system that is personal-computer based. Computer facilities could be set up at the TMEP. The mortuary affairs specialists would receive remains and accompanying documentation. They would review and then input the data onto an OMC using the optical card reader-writer. As mentioned earlier, the OMC can store the required data, including the photograph and fingerprints of the individual soldier. In this case, however, the photograph and the fingerprints would be scanned separately and input to the computer. Likewise, the many documents filled out by the collection platoons could be formatted in the computer to enhance efficiency. The OMC should contain the following data: tentative identification data normally found on the military identification card, such as name, Social Security number, and blood type; address; photograph; fingerprints; personal effects inventory; and record of search and recovery.

The OMC data then would be input into a data base to be maintained by mortuary affairs for historical and records management purposes. These data could be used to prepare reports and answer queries regarding the deceased.

Satellite-based technology could link this data base with the CONUS POE mortuary facility to transmit the data needed to positively identify the remains. The transmitted data could be compared to the individual's medical and dental records, photograph, and Federal Bureau of Investigation fingerprint records. With this procedure, positive identification of the individual could begin even before his remains arrived in CONUS.

Once the remains were prepared for shipment at the TMEP, one OMC would be placed inside the transfer case of each individual. This would identify the body and the accompanying personal effects. The transfer cases then would be consolidated in a group of 12 and placed on a pallet. A master OMC would be generated to account for all 12 transfer cases on that pallet. The remains then would be shipped to CONUS by air.

At the CONUS POE mortuary, the bar-coded information on the master OMC for each pallet would be

scanned and processed into the mortuary affairs data base. The scanned information would be reconciled automatically with the OMC manifest information and any discrepancies noted. The information on each transfer case then would be updated in the mortuary affairs data base.

This automated system would provide real-time information on the status of remains shipments from the TMEP to the POE mortuary facility in CONUS. It also would provide summary reports, link with existing systems to coordinate transportation of remains, and provide information on personnel accounting and disposition. Effective command and control, communications, and computer systems are vital to planning and conducting successful mortuary affairs programs.

As the Army gears up to become Army XXI, it continues to institute revolutionary changes in military logistics. The application of high technology in the U.S. logistics system will improve combat service support capabilities on the battlefield greatly. Information technology can help to positively identify remains and will provide intransit visibility during shipment. The mortuary affairs program should use the Army logistics system's success with the AMS and GTN as a model for a system that will suit mortuary affairs' specific requirements. Although the procedures for transporting remains are similar to those used to transport supplies or equipment, human remains always should be treated with dignity and respect.

ALOG

Editor's note: According to the Mortuary Affairs Center at Fort Lee, Virginia, the Mortuary Affairs Information Management System (MAIMS) is under development as a part of GCSS-Army. Emerging technologies such as radio frequency tags and bar coding will be taken into consideration during system development.

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Managing Logistics in Panama

by Captain Thomas J. Brinegar, USMC

Orders to protect the Panama Railroad in 1903, U.S. Marines were the first permanently stationed U.S. military force in the Republic of Panama. Later, Marines protected the Panama Canal as the vital link between the Atlantic and Pacific oceans and conducted several expeditions throughout Central America and Vera Cruz, Mexico. Now, the long association between the U.S. Marine Corps and Panama is ending as the United States withdraws all of its military forces from the Republic of Panama. This withdrawal is the result of a treaty signed by President Jimmy Carter and Panamanian General Omar Torrijos in 1977 that called for control of the Panama Canal to be turned over to the Government of Panama by 1200 on 31 December 1999. Thus will end almost a century of U.S. military presence in Panama.

The Marine Forces in Panama (MARFOR-PM) currently have a headquarters staff of five (the officer in charge, an intelligence chief, an operations officer, a logistics officer, and a communications chief), a reinforced rifle company that rotates every 90 days, and a small craft company that rotates every 179 days. Additional attachments include a sensor control and management platoon, two heavy machinegun sections, scout snipers, and engineers. The combat service support (CSS) element

consists of motor transportation mechanics, supply warehousemen, military police, cooks, and medical personnel.

From January to July 1999, I served as the MARFOR-PM's logistics officer. It was my job to obtain logistics resources to sustain the MARFOR-PM; serve as the liaison to support functions of the Navy, Army, Air Force, and civilian contractors; support the transition of the Combined Joint Task Force-Panama (Designate); and plan for the retrograde of MARFOR-PM. The withdrawal of the U.S. presence from Panama is a historical military operation other than war (MOOTW). Managing the logistics of this operation centers on the transportation, supply, maintenance, general engineering, and services functional areas of CSS. I would like to share my experiences in these areas for the benefit of those who may participate in other MOOTW's in the future.

Transportation

Reliable motor transport assets, freight and passenger transportation, landing support, and port and terminal operations are vital to the success of the MARFOR-PM's mission. Motor transport capability consists of both tactical and nontactical vehicles. The tactical vehicles include a mix of Marine Corps high-mobility, multipurpose,

□ On 31 December, the United States will transfer full responsibility for operating the Panama Canal to Panama. In this historic photo (left), the U.S.S. Texas passes through the Gatun Locks on 25 July 1919.

wheeled vehicles (HMMWV's) and 5-ton trucks and Army HMMWV's loaned temporarily to the Marine Corps to provide sufficient cargo, personnel, and boat transport capabilities. Nontactical vehicles consist of trucks and vans laterally transferred from the Air Force and Navy to enhance small unit movements and shuttle service for guard details. A vehicle control program for nontactical vehicles parallels the preventive maintenance and dispatch procedures for tactical vehicles. It was modeled after a similar Air Force program. The program's intent is to maintain and operate assigned vehicles properly. Designated assistant vehicle control officers and staff noncommissioned officers (SNCO's) in the company lead the program. I was the program's manager.

The MARFOR-PM also has a 40-passenger bus that has been converted to serve as the quick-reaction force vehicle. The bus is equipped with tinted windows and all-around internal rock guard window cages. The Army theater support brigade's transportation motor pool (TMP) provides buses, flatbeds, vans, and heavy-truck lift support. The Air Force's 24th Wing Transportation Squadron augments the MARFOR-PM with buses, VIP vehicles, and materials-handling equipment.

For many years, Howard Air Force Base was the primary airport of embarkation and debarkation for the MARFOR-PM. An Army unit from Fort Story, Virginia, did a fantastic job of assisting in airfield arrival and de-

parture operations and retrograde planning. Monthly C-130 flights in support of deployed units brought in mission-essential personnel and cargo. With the closure of the Howard airfield on 31 May 1999, air operations were moved to Tocumen International Airport, which is operated by Challenge Air Cargo, Inc., a commercial contractor. (The entire base will close in December as part of the U.S. pullout from Panama.) Contract negotiations between the Air Mobility Command and U.S. Southern Command's Center for Treaty Implementation resulted in new policy and procedures for military forces arriving at and departing from Tocumen. For example, under the new, low-profile contract, Marines have to be in civilian attire.

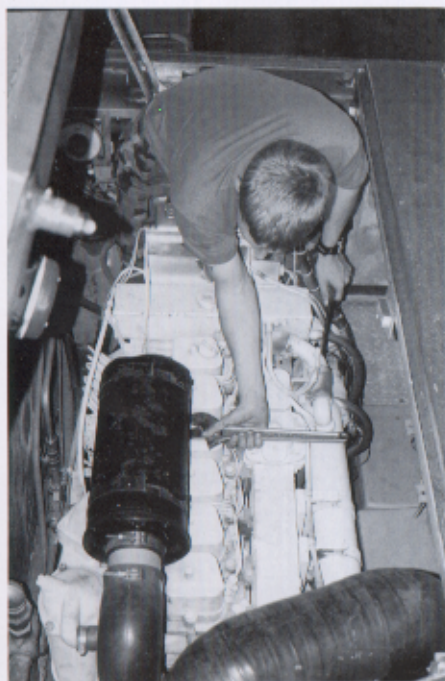
Port operations in Panama are managed by the Military Traffic Management Command (MTMC) and the Military Sealift Command (MSC). Seaports of embarkation and debarkation on both the Atlantic and Pacific sides of the Isthmus of Panama can receive black-bottom (contracted) and amphibious ships. This capability will have greater importance during the final drawdown stages when the retrograde of ammunition and the redeployment of cargo and equipment occurs.

Supply

Finding sources for, and maintaining sufficient quantities of, classes of supply for the MARFOR-PM created many challenges as available resources dwindled during the drawdown. We continuously reallocated equipment and supplies no longer needed by departing units, such as additional garrison property, administrative and cleaning supplies, and nontactical vehicles. Constant planning for, and evaluation of, each class of supply were required to maintain stockage levels. A few of the essential supplies were—

Class I (subsistence). Subsistence for the MARFOR-PM is provided by a dining facility staffed by Marine cooks at a ratio of 1 cook per 50 Marines. In addition, meals, ready to eat (MRE's), were readily available through the Army's troop issue support activity and were stocked in sufficient quantities to last through the end of the mission.

Class II (individual clothing and equipment). Organizational equipment is maintained on a consolidated memorandum of receipt and includes more than 1,200 items, such as garrison property, office furniture, and computer assets. In an environment where redeploying units are sending gear to the Defense Reutilization and Marketing Office (DRMO) by the truckloads, obtaining additional gear and equipment for the unit is not difficult. The difficult part is making sure that the data on the additional items are accurately compiled in a data base and reviewed monthly. Although maintaining this data base did not seem too important in the beginning, it is critical during redeployment when planners have to fig-



□ A MARFOR-PM mechanic repairs the engine of a riverine assault craft.

ure out what to do with all the "stuff." Coordinating with the property book officers of the withdrawing units helped us segregate essential equipment from the voluminous amounts of equipment turned in and tag it for either the MARFOR-PM or the Combined Joint Task Force-Panama. Supplies then could be transferred laterally instead of being shipped to the DRMO. One Marine SNCO I met was sent down from his unit for a few days to locate a wish list of items for his command. He returned with a 463L pallet that contained over \$25,000 worth of gear (much of it brand new), such as flak vests, camouflage netting, and communication assets.

Class III (petroleum, oils, and lubricants) (POL). Obtaining POL for boats or tactical vehicles was not a problem. An existing fuel point dispensed both mogas and diesel, and the rotating companies brought adequate quantities of lubricants with them. A hazardous materials program was established in the small craft company detachment to make sure we were in compliance with base environmental rules and regulations. Proper storage of POL, the availability of spill-response kits, and POL turn-in procedures were critical areas of concern. I had to know hazardous materials handling procedures so I could make sure we were in compliance with the guidelines.

Class V (ammunition). Three types of ammunition—nonlethal, contingency, and training—are stored at both Army and Air Force ammunition supply points. The Army quality assurance specialist (ammunition surveillance) provides invaluable assistance in managing the stored ammunition. Managing ammunition properly requires an understanding of hazard classifications, a knowledge of proper storage and transportation procedures, precise and continuous accountability, attention to detail, and good organizational skills.

Class VIII (medical materiel). Companies rotating to Panama bring with them a modified authorized medical allowance list (AMAL) that can support 180 Marines for 60 days. The AMAL consists of dressings, medications, medical equipment, and administrative materials. The base hospital is a level I facility, which means that it can handle minor surgery and trauma cases. Local hospitals are level II and III facilities and can treat mass casualties and extreme trauma cases. Dental services also are provided by the base hospital. We identified for the independent duty corpsmen and company commander the additional medical support the hospitals could provide and, if necessary, ensured that essential items not available locally were sent on a monthly flight in support of deployed units. On one occasion, the rifle company needed additional insect repellent and sunscreen, and we were able to get them from the Air Force environmental office and the local public health department.

Class IX (repair parts and components). Companies rotating to Panama bring with them limited repair

parts and components for vehicles, boats, and ordnance. Site surveys conducted in advance confirm which parts they need to bring. Ideally, parts should be ordered through the Assets Tracking for Logistics and Supply Support (ATLASS) system; however, software and connectivity problems make that system ineffective. Priority requirements are relayed by phone to the deployed support unit and usually arrive by Federal Express in 8 to 10 days after they are ordered. We are able to get a limited number of vehicle parts from Army units and from Lockheed Martin, which is under contract with the Directorate of Logistics (DOL). Outside vendor support is used at times as a backup. For example, a local HMMWV dealer was located as a backup source of repair parts, but his prices are extremely high.

Communications equipment. Our communications chief did an outstanding job of acquiring and maintaining our communications equipment. He was able to get necessary repair parts from the DOL.

Maintenance

First-, second-, and limited third-echelon maintenance for tactical vehicles is performed by mechanics who deploy with the rifle company. Third- and fourth-echelon maintenance is conducted by Lockheed Martin mechanics. (First-echelon maintenance, such as changing tires and replacing fluids, normally is performed by the vehicle operator. Second-echelon maintenance, such as installing repair parts and components, requires knowledge gained by training and experience. Third- and fourth echelon maintenance involves more complex procedures, such as overhauling engines, and usually is performed outside of the command by highly qualified specialists.) Vehicle maintenance is limited, because MARFOR-PM's mechanics have little or no third-echelon experience, and there is no motor transportation chief to manage the maintenance program effectively. A contact team visit, rota-



□ Second-echelon maintenance of tactical vehicles, such as this 5-ton cargo truck, is performed by mechanics who deploy with the rifle company.

tion of vehicles, and an SNCO mechanic assigned to the rifle company temporarily enhanced our vehicle readiness and maintenance posture.

Boat maintenance is extremely good. A small craft company detachment in the United States sends down rebuilt engines and critical repair parts on the monthly flights. Evacuation of ordnance for third- or fourth- echelon maintenance is minimal, because the rotational companies have sound weapons-cleaning procedures and a good hazardous materials collection program for gathering cleaning rags and materials. The base hazardous materials coordinator is very helpful in this effort.

General Engineering

The MARFOR-PM uses existing billeting, office space, warehouses, hospitals, water, and fuel, so there is no need for engineering reconnaissance, construction, demolition, obstacle removal, or explosive ordnance disposal. The quality of life at Howard Air Force Base is very good. The Marines are adaptable, flexible, and cooperative in a constantly changing environment as base closures send them out of one facility and into another with their furniture and office equipment on their backs. The Services' housing and maintenance departments do a commendable job in meeting every request. Leaking showers are repaired, inoperable washers and dryers are replaced, additional furniture is provided when needed, and light bulbs, toilet paper, and cleaning supplies are issued readily. The Marines' courtesy to the civilian and military housing, lodging, and maintenance personnel is rewarded by continuous, timely support.

Services

Payment for use of facilities, utilities, fuel, repair parts, and supply items is accomplished using three financial tools: the Interservice Support Agreement (ISA), the Military Interdepartmental Purchase Request (MIPR), and the International Merchant Purchase Authorization Card (IMPAC). The ISA describes recurring logistics and administrative support that is provided by the base commander to the MARFOR-PM. The ISA with the Air Force identifies what it will provide, such as administrative and audiovisual services and facilities maintenance, and how MARFOR-PM will pay for services rendered.

MIPR's are the tools that provide the actual funds for the services rendered under the ISA. Sometimes MIPR's are required for items or services not covered under the ISA; for example, to pay for fuel that the small craft company detachment uses during their transit of the Panama Canal. MIPR's expire at the end of the fiscal year and require quarterly reports to be filed with higher

component headquarters. As the logistics officer for the Marine forces in Panama, I received monthly balances on the MIPR's and requested an increase in funds from the higher headquarters comptroller when necessary.

The IMPAC card is used as a last resort for obtaining authorized U.S. Government supplies and resources after we first try to locate the needed items through normal property book channels and the DRMO. The small craft company detachment's officer in charge also had an IM-

PAC card and was available to pick up items when I could not. The IMPAC card is used primarily to pay for minor repairs on Navy nontactical vehicles and for office equipment and computer parts and supplies.

In war, nothing is achieved except by calculation. Everything that is not soundly planned in its details yields no result.

—Napoleon Bonaparte

Lessons Learned

A logistician's approach to managing the myriad requests and requirements of the five functional areas of CSS must recognize that he often will operate in an environment of friction, chaos, and disorder. On the corner of my desk is a black box filled with over 200 5-by-8-inch note cards that I used in Panama. Each one has a logistics requirement written on it, and each one causes me to recall how that requirement was met. Collectively, they remind me that, to be effective, a logistician must—

- Understand his commander's intent and anticipate and prioritize through continual planning and wargaming.
- Ensure that requirements are submitted in a timely manner so supplies arrive where and when they are needed.
- Be persistent and proactive in looking for available resources, and understand the capabilities that the joint services can provide and for how long.
- Understand and adhere to the established support agreements and, when working in the joint environment, demonstrate a spirit of cooperation that allows him to be flexible, adaptable, and courteous.

Although the Panama operation has greater historical significance than some others will, the lessons learned from managing logistics in Panama are universal and are vital to the success of a MOOTW anywhere in the world.

Captain Thomas J. Brinegar, USMC, is the S4 of Marine Wing Support Squadron 273 at Beaufort Marine Corps Air Station, South Carolina. He is a graduate of the Officer Basic Course, the Logistics Officer Course, and the Amphibious Warfare School. He has a B.S. degree in marketing from the University of Maryland.

1st Cavalry Division Wins War on Excess

by Major Burt D. Moore, USAR, and Captain Douglas H. Stubbe, USAR

Efficient and prudent logistics management is more than getting the right equipment to the right place at the right time; it also includes eliminating redundant or excess equipment stocks. Annually, the Army spends an enormous amount of time, labor, and money maintaining and storing excess equipment. These expenses are avoidable and totally incompatible with today's move to "right-size" the Army and efficiently deploy its equipment and personnel around the globe.

Since being deployed to Bosnia from Fort Hood, Texas, the 1st Cavalry Division has successfully waged and won a "war on excess," thanks to the division G4 and a host of other "First Team" players. To achieve victory, several major challenges had to be overcome, including complex operational requirements and extremely adverse weather conditions. But initiative, tenacity, hard work, and selfless dedication to duty by all soldiers involved ensured that the mission was accomplished in true 1st Cavalry Division style.

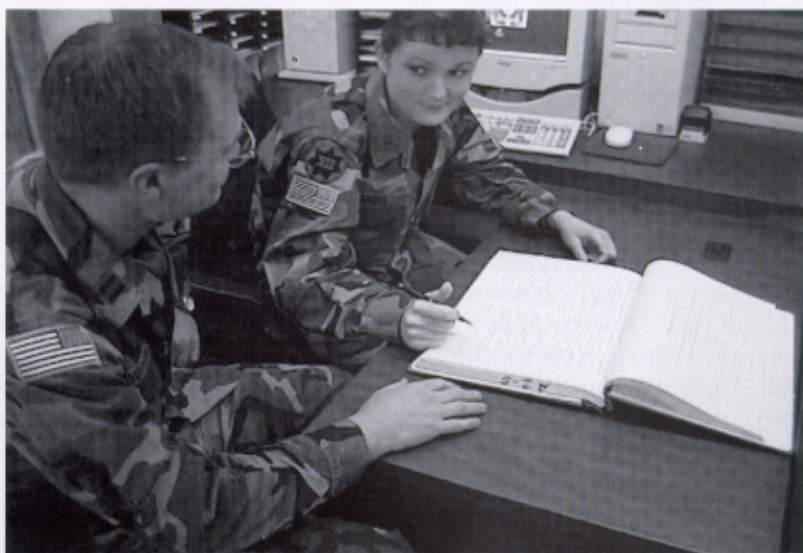
Background

The war on excess started in earnest when the 1st Cavalry Division assumed peacekeeping operations in Bosnia from the 1st Armored Division in October 1998. Major General Kevin P. Byrnes, the 1st Cavalry Division Commander, identified the war on excess as one of the top five priority tasks that he wanted to accomplish. His intent was to retrograde excess equipment from Task Force Eagle (TFE) to the Central Region in Germany so it could be put back into the supply system rather than sit idle at TFE. It quickly became clear that successfully fighting this "war" would require more than a part-time effort.

Where Did It All Come From?

The scope of the war on excess could be gauged by the volume of hand receipts maintained by the 1st Cavalry Division's property book officer (PBO). He was

responsible for several organizational, installation, TFE, and nondivisional property books, as well as ongoing property requisitions, distributions, and retrogrades. The question that comes to mind immediately is, "How did



□ The Task Force Eagle property book officer and a unit commander scrub the deployment equipment list to determine mission-essential equipment.

so much excess equipment accumulate in the first place?"

The first, and perhaps most obvious, source of excess equipment was the right-sizing of the TFE force structure from 8,500 to 6,900 soldiers. This generated surplus military property that had sustained a larger force than the mission now requires. Other, not so obvious factors also played a major role in the growing TFE stockpile. Base camp closures, table of distribution and allowances (TDA) reductions, and inventories made at transfers of authority all resulted in additions to the extensive list of military equipment no longer needed to support the 1st Cavalry Division's peacekeeping role.

Recipe for Success

After the "battle" plans had been prepared, the division G4 planner, Major Carl Bird, was tasked with



❑ Soldiers of 1st Cavalry Division set up a logistics support area at the Lukavac railhead.

managing and coordinating the entire operation. Ultimately, the key players in the war on excess were the division PBO, the division transportation office (DTO), Logistics Task Force 115, and Brown & Root Services Corporation (BRSC), the Logistics Civil Augmentation Program combat service support contractor.

This war on excess team focused their efforts on establishing a realistic timeline to complete the mission. The target date selected was 1 March 1999. The only constraint identified during the planning process was that transportation movements could be restricted if the TFE threat level increased or the weather became bad.

The first major step in waging the war on excess was identifying excess organizational equipment within TFE. Organizational property was a natural starting point, because the units had visibility of their equipment on a daily basis. Thus, all TFE units were proactive in identifying their excess equipment. This would help save money for units deploying to Bosnia by allowing them to use TFE equipment that was already in the theater. An abundance of TDA property in TFE originally came from Combat Equipment Group Europe (CEGE) stocks, which are available to any deploying unit.

In fact, much of the excess in TFE came from different units that had drawn equipment from CEGE stocks. However, when these units rotated back to home station, their equipment remained in the theater. Thus the division PBO became the custodian of excess equipment left over from multiple rotations.

The second step in the war on excess involved what affectionately became known as the "CSM's [command ser-

geant major's] hit team." This team, headed by Command Sergeant Major Paul Inman, 1st Cavalry Division CSM, and Sergeant Major (SGM) Hayward Williams, the division G4 SGM, consisted of noncommissioned officers and enlisted personnel who toured every base camp and facility in TFE during November 1998 and provided units with technical assistance in eliminating excess. Their involvement was essential to pulling together the team effort required to accomplish General Byrnes' intent.

Execution

After the CSM's hit team identified excess equipment, the TFE PBO sat down with each TFE unit commander and scrubbed his unit's deployment equipment list (DEL) to determine mission-essential equipment. The PBO designed a unique DEL tracker system to monitor equipment retrograde status. The tracker system is an Excel spreadsheet that is used to track deployable equipment coming from the continental United States. It contains the receiving unit's name, the date the DEL was issued to the unit, the date a response is required from the unit, and a "Bring from CONUS [continental United States]" line. The PBO merged modification table of organization and equipment organizational property with the TDA on the spreadsheet. The results showed all of the equipment a unit should have when it arrived at TFE. After reviewing the DEL, unit commanders decided what equipment they wanted to delete from the TDA equipment list.

This PBO initiative contributed immensely to the overall success of the mission. "The DEL tracker has



❑ Excess items are packed into MILVAN's for retrograde from Bosnia to the Central Region in Germany.



□ Rolling stock is washed at the Lukavac washrack before it is staged for loading onto a railcar. At right, a soldier attaches a radio frequency tag to a vehicle being shipped to the Central Region.

worked very well for us," said Captain Steven Halverson, division PBO. "The tracker makes it easy to determine if the unit has any excess equipment and to see if the TDA is sufficient for deployment."

The goal was to minimize the deployment of prime mover materiel—the big equipment—that didn't need to be deployed to TFE. "Smaller items, the type that fit into MILVAN's [military-owned demountable containers], weren't really the problem we faced," said Halverson. However, MILVAN's full of excess equipment did represent a battle in the war on excess.

Consolidating the equipment and preparing it for shipment to the Central Region was the next major challenge in the war on excess. This required the DTO to coordinate extensively with customs and railway officials. It also meant endless hours of planning, risk assessments, and safety briefings.

The division PBO had 20 empty MILVAN's staged at Eagle Base. He then scheduled units to turn in their excess nonrolling stock that had not been transferred laterally within TFE, and this equipment was loaded into the MILVAN's.

Moving the excess rolling stock was a bit more complex. It called for units to convoy 127 vehicles from five different base camps and stage them in serial order along the road to the Eagle Base east gate for convoy to the Lukavac railhead. This time-consuming process was minimized by detailed planning and teamwork and the flexibility and professionalism exhibited by all units involved.

Railhead Operations

A logistics support area (LSA) was established at the Lukavac railhead to support the equipment retrograde to the Central Region. The LSA consisted of four tents—two dining tents and two warming tents—a 292-foot radio antenna, a 27-point washrack, a MILVAN that served as a command and control center, a 40-ton load-

ing ramp, and concertina wire strung to limit access to the area.

The LSA was operational for 3 days while vehicles and MILVAN's were loaded onto flatcars. Excess rolling stock was convoyed from Eagle Base and staged for final movement onto the railcars. The MILVAN's were brought by palletized loading system trucks to the Lukavac railhead, where they would be loaded by crane onto the flatcars.

All rolling stock was washed thoroughly at the Lukavac railhead washrack. Then they were driven to the LSA area, where they were lined up in front of the loading ramp according to the train manifest. All vehicle silhouettes were reduced to meet customs and transportation requirements. Bumper numbers were removed from each vehicle and a radio frequency tag attached that would provide intransit visibility of the vehicle while it was en route from Lukavac to the Central Region.

At the railhead, soldiers were required to shovel snow off flatcars and apply salt before loading the vehicles. Following a final safety inspection and a driver safety briefing that outlined truck commander responsibilities, the vehicles were loaded onto the train. All of the safety briefings given throughout the operation were important, but the briefing given to the truck commanders during the ramp-loading operations was extremely important. The truck commander's primary job was to guide the huge 5-ton tractors, trucks, and other rolling stock onto the railhead ramp safely. Drivers in these vehicles sat so high in the cab that they could not see the ramp or the flatcar as they rolled onto the train; drivers could see only the hands of the truck commander guiding their movement onto the railcar and down the entire length of the train. This was without question the most dangerous part of the retrograde operation.

Once the equipment arrived in the Central Region, the 200th Theater Army Materiel Management Center (TAMMC) used a relational data base to process the



□ Above, a truck commander guides a driver onto a flatcar—the most dangerous part of the retrograde operation. At right, excess equipment sits on a railcar headed for the Central Region in Germany.

equipment for redistribution. The equipment was segregated by commodity and matched with corresponding theater shortages and repair programs. Unit shortages were prioritized so they could be filled according to urgency. The remaining equipment was entered in the theater Standard Army Retail Supply System.

Ultimately, winning the war on excess was a battalion-level operation. In total, 127 pieces of rolling stock and 20 MILVAN's containing over 2,000 items valued at more than \$12 million were retrograded to the Central Region from the Lukavac railhead—12 days ahead of schedule. Because of well-orchestrated planning and safety-conscious leadership, this mission was accomplished successfully without accidents, injuries, or property damage.

Six Valuable Lessons Learned

Eliminating excess equipment is a monumental undertaking. It requires extensive planning and coordination throughout all staff sections. Other logistics organizations can benefit from the lessons learned by the 1st Cavalry Division during its war on excess—

- Develop a clear vision and a measurable scope of what is to be accomplished. A clear vision and scope are essential ingredients in successfully putting the excess equipment plan into action.
- Develop an optimistic but realistic timeline for completing the undertaking. The war on excess most likely will be in addition to the unit's everyday tasks. Therefore, the timeline must be consistent with, and not detract from, the unit's primary mission.
- Ensure that your unit has a current TDA before deployment. Current TDA's make it easier to determine what equipment is indeed excess.
- Coordinate with each brigade S4 and set a firm "no later than" date for reporting excess to the PBO. Allow ample time for commanders to determine what equipment is excess.

- Remember that equipment condition coding is a unit responsibility. Unit maintenance teams must be proactive in conducting the appropriate technical inspections to determine if excess equipment should be repaired before turn-in or if it simply can be "coded out" and retrograded.

- Check and double-check to ensure that PBO equipment hand receipts match the transportation manifest. Any discrepancy can cause a train to be delayed in customs.

The 1st Cavalry Division's successful war on excess was possible only by having a clear vision of what needed to be accomplished and dedicated soldiers willing to do what it took to get the mission accomplished safely. It was a superbly executed job, accomplished by a truly great team—the First Team!

ALOG

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Keeping Simulation Systems Alive

by Conrad Ortega and Larry Knapp

An on-site cable repair program for tactical engagement simulation systems saves the Army money in cable replacement costs and reduces training time lost while awaiting repairs.

Tactical engagement simulation (TES) systems support training readiness at locations and installations throughout the world. Virtually all military personnel—Active Army, Army National Guard, Army Reserve, Marine Corps, or Air Force—have had the opportunity to participate in a training event using TES. A TES system is a training device that simulates the effects of a direct-fire weapon and operates in a tactical training environment. In essence, firing the weapon simulator is much like firing the actual weapon. However, instead of firing live ammunition, a TES simulator transmits harmless, eye-safe laser beams. The TES program currently consists of the following family of training systems: Multiple Integrated Laser Engagement System (MILES), Simulated Area Weapons Effects-Radio Frequency/Multiple Integrated Laser Engagement System II (SAWE/MILES II), Multiple Integrated Laser Engagement System 2000 (MILES 2000), Aircraft Survivability Equipment Trainer IV (ASET IV), Area



□ A technician repairs cable at the Combat Maneuver Training Center, Hohenfels, Germany.

Wide Scoring System (AWSS), Opposing Forces Surrogate Vehicle (OSV), and Air Ground Engagement System II (AGES II).

Cables connect these systems with the weapons used in training. The cables are essential to keeping the systems operational. To reduce the turn-around times and costs for replacing damaged cables, the Army Simulation, Training and Instrumentation Command (STRICOM) at Orlando, Florida, established cable repair facilities.

Cable Maintenance Problems

Tracking the large number of cables required to integrate TES with the various weapon systems that simulate actual firing was a major challenge to the STRICOM/Lockheed Martin logistics support team. Many of the cables deteriorated due to heavy use during training rotations or were damaged in training accidents. Adding to this difficulty, the manufacturer constructed a number of the cables in an "octopus" fashion, with all "legs" terminating at a main connector. It was obvious to the STRICOM and Lockheed Martin logistics support elements that when a cable malfunctioned, it was probable that only one or two of the "legs" were bad and the rest of the cable configuration was still serviceable. Replacing a cable with a complete, configuration connected set-piece was costly; training sites had no repair facility immediately available; and the turn-around time for re-

placing cables at many locations was approximately 6 months. The lack of an easy, cost-effective way of replacing defective cables led to lost training days for soldiers in the field, which affected their readiness, and created a large bill for procuring new cables.

Finding a Solution

STRICOM and Lockheed Martin personnel had many discussions on how to correct the TES cable deficiency. Repairing the cables in lieu of procuring new ones was selected as the best course of action. To reduce turn-around time, the team sought solutions that enabled cables to be repaired either at, or as close as possible to, the training sites.

STRICOM TES personnel partnered with Lockheed Martin to create a plan for repairing TES cabling on site. STRICOM sent unserviceable and nonreparable cables, along with applicable drawings, to a Government maintenance facility operated by Lockheed Martin for breakdown and inspection. Historical data identified high-failure items based on average monthly usage, and available drawings specified cable construction, connectors, and parts required for repair. The facility took apart some of the connectors to identify any parts that may have been missed. Once they identified part numbers and established sources for connector repair parts, cable repair or replacement cable manufacture could begin.

The chart below provides an overview of the materials required to establish the repair facility:

Consumables:		
Safety materials	Solder	Mold release agent
Heat shrink	Cable ties	Potting compound
Solder wicks	Paint	Cable labels
Wire markers	Velcro	Masking tape
Electrical tape	Alcohol	Protective caps
Repair Parts:		
Bulk cable	Connectors	Connector backshells
Retaining straps	Rivets	Connector ferrules
Tools, Special Tools, Test Equipment, Equipment:		
Curing ovens	Lights	Work benches
Wire crimpers	Printers	Vacuum system
Vices	Heat guns	Taps and dies
Tool kits	Air pliers	Megometer
Injector kits	Scanners	Cyro freezers
Solder iron tips	Multimeter	Cable cutters
Solder stations	Stools	Tie-rap gun
Cable testers	Controller	Air compressors

Overcoming Challenges

The drawings identified the electrical construction of the cables and assemblies and enabled STRICOM to develop easier standard shop practices for putting the pieces

together. The biggest challenge was sealing components using a potted backshell. From experience, they knew that mixing two-part compounds introduced air, leaving holes in the mold; however, using a frozen pre-mixed material solved that problem. After many modifications, a "potting" procedure that involved injecting pre-mixed material into a mold produced the required outcome.

Effecting cable repairs remained a challenge, especially when some of the "legs" were cut in half during training. A "hot dog" mold was developed by making the electrical repair and then potting over the damaged area, thus providing protection and reinforcement. STRICOM quickly realized that they could make all types of repairs effectively and efficiently with outstanding results. Because Lockheed Martin had already proven that repairing TES cables would decrease turn-around time and that estimated cost savings could be substantial, manufacture or repair of the various TES cables was ready to become a routine event.

STRICOM and Lockheed Martin had to overcome the initial challenges in manufacturing and repairing TES cabling before full implementation. Using partnership and teamwork, they uncovered and resolved a number of issues and obstacles. With a start-up cost of \$361,194, their efforts decreased the turn-around time from 6 months to 2 to 4 hours, thereby extending cable life and minimizing disruptions during field training rotations. The cost savings for August 1997 through December 1998 totaled \$2,498,781.

This initiative was so successful that other programs have followed suit in hopes of generating like savings. TES cable repair facilities are located currently at the National Training Center at Fort Irwin, California; the Combat Maneuver Training Center, Hohenfels, Germany; and Chesapeake, Virginia.

ALOG

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Preserving Strategic Rail Mobility

by Robert S. Korpany

The Railroads for National Defense Program ensures that the commercial railroad network is ready to deliver combat power where it is needed when it is needed.

Tell any mechanized maneuver commander he has to fight a battle without his Abrams tanks or Bradley fighting vehicles, and you probably will see a puzzled look on his face that could be interpreted as, "What planet are you from?" or, "What language are you speaking?" Since it is doubtful that a major conflict will occur just outside the gates of Fort Stewart, Georgia, or Fort Hood, Texas, a key element of a successful engagement will be getting combat power wherever it is needed on time.

Without a reliable commercial rail infrastructure, it is doubtful the tanks and Bradleys will make it to their place of business. To make sure they do, the Military Traffic Management Command developed the Railroads for National Defense (RND) Program in 1976. In 1991, the RND Program was assigned to the Military Traffic Management Command Transportation Engineering Agency (MTMCTEA), which now executes the program on behalf of the U.S. Transportation Command. This program ensures that the commercial rail infrastructure in the United States meets Department of Defense (DOD) requirements for deploying a force. The RND Program works to preserve our strategic rail mobility.

RND's Functions

The poor condition of the rail industry in the mid-1970's led to development of the RND Program. At that time, the rail industry was characterized by poor track maintenance that caused several derailments and the bankruptcy of six major eastern carriers and foretold a questionable future. DOD experienced on-post derailments that delayed deployment exercises. At this point, DOD realized how important the rail infrastructure

was and became concerned about the state of the commercial rail industry. DOD also realized that it did not know which installations required rail service or which commercial rail lines between installations and ports were important to national defense.

The RND Program performs three major functions. First, it identifies DOD's requirements for commercial rail service. Second, it integrates these requirements into commercial rail planning to support DOD transportation policy. And, finally, it ensures strategic rail mobility by protecting required rail infrastructure.

The RND Program works by following four fundamental procedures and by using an integrated network of transportation agencies and contacts to support its objectives, including state departments of transportation and several other civilian agencies and commercial rail carriers. Those procedures are—

- **STRACNET report.** On a periodic basis, as part of the RND Program, MTMCTEA updates, publishes, and coordinates the report on the Strategic Rail Corridor Network (STRACNET). Updating this report is important because of changes in traffic levels and installations, abandonments, and mergers. The report defines DOD requirements for rail service and identifies the commercial rail lines that are important to national defense.

To update this report, MTMCTEA works with the various Service headquarters staffs to identify their requirements for commercial rail service. Under the direction of the headquarters staff, each major command tasks installations to provide written justification for rail service. These justifications are forwarded to the headquarters staff for approval. The approved justifications are compiled into a requirements list. When the list is

complete, MTMCTEA works with the Federal Railroad Administration (FRA) to implement the program. FRA monitors traffic levels and identifies trends in increasing or decreasing traffic on rail lines. From this analysis, FRA makes recommendations to the RND Program for changes to the designation of STRACNET rail lines. This ensures that the lines designated as part of the STRACNET are economically viable and are not likely to be candidates for abandonment. FRA also conducts annual safety inspections of STRACNET rail lines to ensure that tracks are maintained adequately and are safe for travel. Based on these two analyses, FRA recommends the refined network that forms the foundation of the STRACNET report. MTMCTEA publishes and coordinates the report with appropriate agencies to encourage those agencies to support the current DOD transportation policy, which is to rely on commercial transportation whenever possible to minimize costs to DOD.

- **Abandonment analysis.** One of the most important and time-consuming functions of the RND program is to analyze requests for abandonments filed with the Surface Transportation Board (STB), the successor to the Interstate Commerce Commission. An abandonment normally is approved when traffic and revenue on a line decline to the point that it is not profitable to keep the line in service. Each year about 200 abandonments are filed, and generally 2 or 3 of these affect national defense. When an abandonment affects national defense,



MTMCTEA examines a series of options, each representing a greater expense to DOD—

- Civil sector retains the line (RND's preferred option).
- Shippers take over the line.
- Traffic or rates increase.
- The STB arbitrates.
- The railhead is relocated.
- The line is purchased or maintained by the appropriate Service headquarters (last resort).

Of the more than 3,300 abandonments filed with the STB so far, 70 have impacted national defense. Using the options above, MTMCTEA has resolved 64 of these without using DOD funding. Recently, the rail line to Camp Ripley, Minnesota, was a candidate for abandonment. MTMCTEA is working to preserve the line with a minimal expense to DOD.

The option to participate in an STB proceeding gives DOD an opportunity to submit its reasons for termination of the abandonment to a neutral authority. The STB acts as an impartial arbitrator to decide if an abandonment should be approved. In 1996, this arbitration option nearly was lost through a streamlining of the abandonment process. MTMCTEA, through the RND Program, submitted testimony on the value of the process to national defense. Every comment in the MTMCTEA testimony to the STB was approved, which resulted in DOD's retaining this valuable option for preserving rail service to Government installations.

- **Merger examination.** In addition to abandonment analysis, MTMCTEA, through the RND Program, analyzes proposed mergers and bankruptcies for impacts on national defense. Mergers typically are implemented to improve efficiency by creating a single line with fewer interchanges. Early in the merger process, MTMCTEA works with the carriers to integrate defense needs into the application. After a merger application is filed with the STB, MTMCTEA analyzes it for its impact on DOD. Preserving STRACNET is MTMCTEA's primary goal, and preserving carrier competition at the installations is



□ The excessive rail end gap in the photo above left typifies the poor condition of railroads in the mid-1970's. Without a reliable commercial rail infrastructure, it is doubtful the M1 Abrams tank at left could be delivered where it is needed when it is needed.



□ The RND Program maintains information on the location of structures, such as this bridge, that may be out of service as a result of a natural disaster, as well as the location of alternate lines that could be used.

its secondary goal. If required, MTMCTEA files comments with the STB to protect DOD's interests. In recent years, MTMCTEA analyzed mergers involving the Union Pacific and the Chicago and North Western; the Burlington Northern and Santa Fe; the Union Pacific and Southern Pacific (UP/SP); and the most recent Conrail acquisition by CSXT and Norfolk Southern Corporation. In the case of the UP/SP merger, MTMCTEA filed testimony with the STB to protect DOD's competitive interests at six Government installations.

- **Monitoring.** Under the provisions of the RND Program, the rail network is monitored to ensure that it is capable of deploying a force. During natural disasters such as hurricanes, earthquakes, floods, or fires, MTMCTEA receives situation reports on the status of the rail lines from the Office of Emergency Transportation, which is a part of the U.S. Department of Transportation. When a line designated as part of STRACNET is out of service, MTMCTEA informs the carrier of the line's importance to national defense. Typically, when this happens, the line is restored to service in a few days.

Commercial rail carriers and several agencies are vital to achieving the goals of the RND program. MTMCTEA has contact with each state rail planner. Through their knowledge of the state rail system, their contacts, and their experience with abandonment options, they help considerably in preserving lines proposed for abandonment. FRA actively participates in the implementation of the goals of the RND Program by monitoring traffic levels and conducting safety programs.

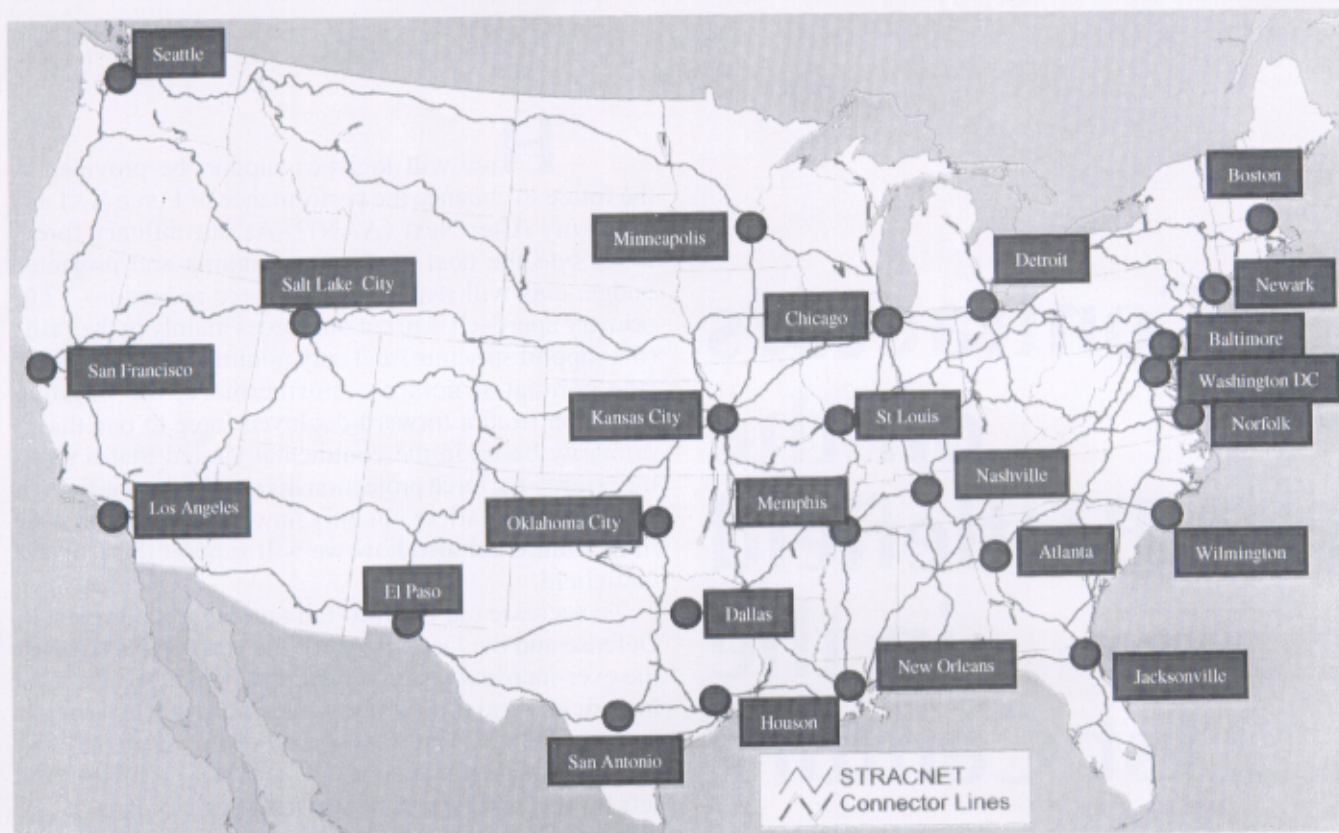
These four established procedures have a track record that has supported strategic mobility time and again over the 23 years of the program's existence. The RND Program uses a powerful network of agencies and personnel that, when combined at the appropriate time, ensures that defense requirements are met.

RND Evolution

Any program that exists for a period of time eventually goes through some changes, no matter how effective it is. This is true of the RND Program, which has evolved successfully over the last few years. One recent key initiative involves access track to each of the power projection platforms. Access track is the section of track between an installation's boundary and the commercial mainline track. MTMCTEA has analyzed all 15 of the Army's major power projection platforms, determined the condition of the access tracks, and taken action to improve their condition. On two occasions at Fort Sill, Oklahoma, MTMCTEA worked with the Union Pacific Railroad to improve the access track. This action not only supported strategic mobility, it also improved the rail competition for the installation, since two carriers now serve it. Having two carriers permits the installation transportation officer to accept bids from both of them, which helps to keep transportation costs low.

At the request of Fort Stewart, MTMCTEA had its access track inspected by the FRA to ensure that it met the standard for safe track. FRA determined that it did meet the standard for safe track but offered suggestions for improving the track, which the carrier implemented. Since the installation hauls heavy tanks to port, MTMCTEA talked to the carrier about installing additional ties. In conjunction with a mainline construction project, the carrier saved some material that will be used to make these track improvements whenever their crews are in the vicinity of Fort Stewart. It is a slow process, but progress is being made. Additional work still may be required.

A similar situation existed at Fort McCoy, Wisconsin, and the post requested MTMCTEA's assistance to get the track upgraded. Again, the FRA conducted an inspection of the track. After the FRA noted defects, the carrier repaired the track to a safe operating standard. MTMCTEA currently is coordinating with the carrier



□ This map shows the interconnected STRACNET lines that are important to national defense as well as other rail lines that serve as connectors.

to improve the track at no cost to the Army.

To monitor the status of STRACNET, MTMCTEA obtained information on the location and condition of the tracks on or in structures such as bridges and tunnels that may cause problems for rail traffic during natural disasters. The information on rail clearances has been valuable in determining if wide combat tanks transported by the Army can be accommodated on a particular line. This information can help determine if an alternate line exists that would meet the requirements of the RND Program if a particular STRACNET line were out of service. FRA agreed to automate the clearance data for these alternate lines. MTMCTEA continues to gather additional data on rail lines and to automate them for easy access.

As a part of its effort to monitor STRACNET, MTMCTEA met with major rail carriers to determine how they monitored their rail lines. Through these meetings, MTMCTEA obtained a direct link to the National Response Center and now receives daily incident reports on the status of the rail network. These daily reports help to determine if a STRACNET line is out of service. The ultimate goal is to automate this process so it will provide the information by computer.

MTMCTEA also performed an analysis to determine if the key rail routes between the power projection plat-

forms and the nearest ports had alternate bypass routes available. This report supports the Critical Asset Assurance Program to protect assets in the United States that are vital to readiness and operations.

The commercial rail network was put to the test during Operations Desert Shield and Desert Storm, and no significant problems were noted. It proved to be a crucial link in transporting combat power. The successful use of the commercial rail network helped to ensure a swift end to the war, which was a real testament to how well the RND Program supports strategic rail mobility.

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Contractors on the Battlefield in the 21st Century

by Captain Isolde K. Garcia-Perez

As we move
into the 21st century,
contractors
are being used increasingly
in forward positions.
The author discusses
the impact
on commanders
who find
themselves responsible
for contractor personnel
as well as soldiers.

How will logistics support be provided in the future to enhance the performance of Force XXI and the Army After Next (AAN)? As our military forces move into the next century, continuing and projected budget cuts will require further force reductions. The primary approach is to cut our forces mainly in the "tail" (the support structure) and only minimally in the "tooth" (the combat structure). Furthermore, the ongoing transition from a forward-deployed force to one that is primarily based in the continental United States shifts the priority for force projection in favor of the warfighter. These changes affect not only how our forces will fight in the future but also how we will support them on the battlefield.

To decrease our tooth-to-tail ratio, the Department of Defense and the Department of the Army have targeted the ever-increasing support and infrastructure costs that historically have consumed over half of our defense budget. Unmistakably, the result of this approach will be a growing logistics shortfall. One way to fill the void left by the downsizing of our logistics forces is to use contractors on the battlefield. Contractors will not replace our force structure, but they will augment the Army's capabilities and provide an additional option for meeting support requirements.

The concept of using contractors as force multipliers is not new, but the degree to which we plan future use of contractors is increasing steadily. Previously, contractors were used primarily in a rear area support role. Can we successfully anticipate and plan for potential complications connected with the forward deployment of contractors?

The consequences of using contractors on the battlefield go beyond the impact on the armed forces that are required to protect them during hostilities. It also affects the commanders, their planning staffs, and their risk assessment procedures.

Because the Army has taken the largest share of personnel cuts among the armed services and has seen a substantial increase in peacekeeping missions, it finds itself relying heavily on civilian support. As a result, planners and commanders have to manage additional planning requirements. When planning for a military mission, commanders now must consider and anticipate the support requirements of contractor personnel. Planners must address the issue of protection and security of contractors and their equipment. Therefore, they must use the risk of hostilities as a basis for determining whether or not to provide security. Commanders can recommend not using contractors if the risk of hostilities is high.

Types of Contractors

The Army normally uses two types of contractors on the battlefield: system and contingency.

System contractors are involved in the manufacture and life-cycle management of major systems, such as vehicles, weapons, and aircraft. They provide technical and maintenance support during peacetime and wartime for the systems they produced. The logistics support element monitors the performance of these contractors. One example of this type of support is the 1997 proposal for a Prime Vendor support arrangement for the Apache helicopter with Boeing and Lockheed Martin. The Boeing-Lockheed Martin program would transfer responsibility for complete wholesale support of the Apache to the contractor-operated Team Apache System. The Team Apache System currently is undergoing testing. Contract terms providing specifics for battlefield support of critical systems are still under review.

Contingency contractors provide support primarily during contingencies. Depending on mission, enemy, terrain, troops, time available, and civilian considerations (METT-TC), they provide supplies and services in support of Army forces during operations. These contractors may include host nation, third country, or U.S. contractors. The elements responsible for contract management and the contracting officer control contingency contractors. These contractors fall into two subcategories, Logistics Civil Augmentation Program (LOGCAP) and operation-specific contracts.

LOGCAP is an Army program. It is used primarily in areas where no multilateral or bilateral agreements exist. However, host nation support agreements usually will be in place. LOGCAP does not replace force structure.

Operation-specific contracts are negotiated after planning has begun for a specific contingency. They are arranged in theater during pre-deployment or deployment to ensure support when the main force arrives. This type of contract must be integrated into the overall support plan.

Role of the Contractor on the Battlefield

Analysts argue that using contractors on the battlefield as force multipliers is one way to decrease costs. However, associated risks must be analyzed responsibly to determine second- and third-order effects on the mission. Contractors can provide substantial combat service support and some combat support on the battlefield. These functions include, but are not limited to, maintenance and transportation support.

Maintenance support. System contractors usually

perform sustainment maintenance on a case-by-case basis. These contracts encompass peacetime and wartime and cover specific weapon systems and subsystems. System contracts will require the contractor to be present on the battlefield and work directly with soldiers.

The contingency contractor can provide field services, such as laundry, bath facilities, and clothing repair, and base-operations support to deployed military forces in an austere environment, which includes construction and real estate management and maintenance.

Transportation support. System contractors have a limited role in this area. Transportation support in peacetime and wartime will be provided as a part of Prime Vendor support. METT-TC permitting, contingency contractors can perform selected mode and terminal operation functions to augment Army transportation units.

Operations Joint Endeavor, Joint Guard, and Joint Forge in Bosnia-Herzegovina recently benefited from contracted logistics support provided through LOGCAP. LOGCAP was one of the tools available to support base camp logistics operations. The original contract was awarded to Brown & Root Services Corporation (BRSC). On 26 November 1995, the BRSC contract was activated to provide an intermediate staging base at Kaposvar and Taszar, Hungary. BRSC deployed about 1,000 employees to the region. Their mission was to support U.S. troops serving in Bosnia, Hungary, and Croatia. BRSC personnel, along with 5,500 locals, built 33 camps and provided cooking, laundry, sanitation, and some mail services.

Since the Army awarded a contract to BRSC for logistics services in 1992, Brown & Root employees have become a familiar sight for military troops in the field. In 1997, the original contract awarded to BRSC came up for renewal. Following a competition, DynCorp was awarded the contract under the management of the Army Materiel Command. BRSC won the contract again this year.

Impact on the Armed Forces

The experience with a contractor work force in Bosnia has been good for the most part. Augmenting logistics support with LOGCAP contractors has allowed the military to focus on its primary mission. Commanders on the ground have not had to worry about or plan directly for field service support. This has freed up military personnel for their primary mission requirements.

There are times when the use of contractor personnel affects the commander's planning and mission focus. A contract condition can require the deployed forces to

provide security for the contractor work force and their equipment. In that case, operational commanders must consider additional security requirements in their planning process. This can be difficult to execute, especially since the tactical footprint will be small at the start and end of an operation. Aside from the planning requirements, the commander also may have to give up soldiers to augment the additional security mission.

Where contractor personnel locate in a theater and how they move can have an impact on the military forces they support. Commanders must conduct risk assessments to determine if contractor support is suitable. The risk assessment should cover the situation, location, potential for hostilities, risk to mission accomplishment, risk to contractor personnel, and cost of the contract during peacetime and wartime.

The commander also must be prepared to react if the contractor is unwilling to provide services in a war zone. As stated in the *Congressional Record* in 1984, "Although contractor personnel have historically been willing to go into a war zone to work and have proven to be reliable, there is still no assurance that essential civilians hired to serve in peacetime would be willing to remain in a potential war zone should a conflict actually start." Since the risk associated with forward deployment of contractor personnel is not evaluated easily, commanders only can predict potential problems.

One area of potential risk is the legality of having noncombatants in a combat zone. Contractors providing essential services are expected to use all means at their disposal to continue to provide such services according to the terms and conditions of the contract during periods of crisis until appropriately released or evacuated by military authority. To be relieved of the responsibility, civilian contractors simply have to resign their positions. Unless a formal declaration of war has been issued, the commander has no recourse.

What does that mean to the commander? The loss of a mission-essential contractor potentially can degrade mission accomplishment and endanger soldiers. In anticipation of the potential departure of mission-essential contractor personnel, leaders must have a workable contingency plan and must be prepared to divert warfighters to a support mission until the contingency plan can be implemented.

Command and Control

Controlling civilian contractor personnel on the battlefield presents a challenge for the commander. According to Department of the Army Pamphlet 715-16, Contractor Deployment Guide, contractor personnel who support U.S. forces during a declared war are subject to the provisions of the Uniform Code of Military Justice (UCMJ). Outside a declaration of war, they do not fall

under the UCMJ.

Another area of consideration is the status of contractor personnel providing support in foreign countries. Contractor personnel will be subject to Federal, host nation, and international laws, laws of war, and status of forces agreements, yet direct supervision resides with the contractor. However, this does not deprive the commanders completely of control. They can exercise indirect control through contract terms and conditions and by attachment (with special reporting procedures) to a specific military unit. The commander can direct such a unit to provide administrative accountability, and contractor personnel can be required by the contract to follow all guidelines and instructions issued by the commander.

Since direct supervisory authority for contractor personnel resides with the contractor, the commander can exercise only indirect command and control. As a result, commanders are faced with potential disruption of the mission and security in the area of operations (AO). Primarily, contractors are responsible for disciplining their work force. The commander's alternatives include withdrawal of facility access, revocation of employment status, and removal from the AO. For the military commander, civilian contractors can cause disciplinary problems in the AO. Military personnel work well in a structured environment where rank matters on and off duty; for civilians, this can be a shock.

Military Support to the Contractor

Since contractors will live and work in the field environment, the Army must provide certain support services. These services will be especially necessary during the initial deployment phase. When the contractor enters the theater with the military units, the contractor staff will work with the soldiers to establish theater support operations.

Since the theater commander is responsible for the security and support of the contractor cell, the military support plan must include requirements for supporting them. As a minimum, the commander must plan to provide field service support, protection from enemy action, individual weapons, and training in basic military skills. Having to support the contractor work force places additional logistics and security requirements on the deploying units. Commanders must include contractor needs when considering the unit's life support, security, and mission requirements. This could have an impact on the availability of warfighters for the tactical mission.

Protection and Security

There may be a contract condition requiring the military to provide security to contractor personnel and their equipment. Commanders are responsible for all

personnel and activities in their AO, including the contractor's work force deployed on the battlefield. The nature of the maneuver will determine the extent of security requirements for contractor personnel and their operation.

One issue under review is whether or not contractors should be responsible for their own security. Provisions of The Hague and Geneva Conventions and other applicable international laws do not consider contractor personnel as combatants. Therefore, it is not certain if contractor personnel legally can carry weapons. Regardless of this unresolved issue, contractor personnel may choose to carry weapons. Subject to the commander's decision, and with appropriate training, standard military weapons and ammunition can be issued to contractor personnel during deployment processing. Contractor personnel will be held accountable for Army-issued weapons and ammunition.

Civilian contractors may carry Government-issued sidearms for self-protection. To ensure availability of such weapons, commanders must add them to their inventories. However, civilian contractors may refuse to carry weapons. In that case, military forces must provide security for these personnel. Commanders also must decide whether or not to issue weapons to non-U.S. contractor personnel. Considering these requirements, commanders will have to conduct ongoing risk assessments to make sound decisions.

Another danger to consider when employing civilian contractors is infiltration of the contractor work force. Even an enemy with relatively unsophisticated conventional battlefield capabilities can have very sophisticated operatives who can sabotage information processing systems. But attacks on civilian logistics operations can be more direct than infiltration. For example, civilian organizations rely on civilian communications systems, which are more vulnerable to terrorist strikes.

In summary, the added security requirements for contractor personnel and equipment must be coupled with the very real danger of infiltration, sabotage, and communications disruption in the AO. As a result, commanders must stay aware of contractor operations in their area and must be able to implement a contingency plan with little or no notice.

Risk is the chance our commanders and their units take when deploying for a military or humanitarian mission. Risk assessment is a tool the commander can use to determine the potential level of hostilities in the AO. Adding civilian contractors to that equation adds risk factors that must be considered during the assessment and planning phases for all missions and contingencies. The Army's needs are changing on the verge of Army XXI and AAN. With the push for a

smaller and more lethal force, increased operating tempo, and power projection, our future leaders must be prepared to address these changes. At the same time, they must be trained to integrate civilian contractor logistics support into their overall planning process. We are behind the power curve already.

At present, contractors are deployed in various theaters of operation. They will continue to be deployed in the future, very likely to a greater extent and possibly forward on the battlefield. The emphasis now must be on the training for our future leaders. "Civilian contracting as a force multiplier" should be added to the Army's professional development program. Training on the subject must be given priority at all levels of command. Aside from the formal, technical senior leadership training, priority of training should go to our junior leaders who will use such services. Junior leaders must become familiar with the advantages and limitations of deploying system and contingency contractors. Civilian outsourcing and contracting courses should be offered as early as the Officer Basic Course. As a minimum, leaders should receive comprehensive instruction in the types of contractors, the role of the contractor on the battlefield, location of the contractor on the battlefield, command and control, military support to the contractor, and protection and security. Leaders also must understand their limited command relationship to the contractor work force and their regulatory requirements to support the contractor in the AO.

The use of civilian contractors on the battlefield does not replace force structure. Therefore, commanders and planners must be familiar with the contractor selection process. They must be prepared to conduct parallel contingency planning in the event a contractor does not perform or refuses to perform in a hostile environment. Leaders must know how to anticipate and plan for the potential impact on their mission and their forces. Planners must remember that civilian contractors are force multipliers only and avoid total dependence on them.

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Modernizing Hungary's Logistics Infrastructure

by Captain Imre Eszenyi, Hungarian Army

As Hungary joins NATO and seeks admission to the European Union, one of its greatest challenges is upgrading its logistics infrastructure to meet Western European standards.

Ten years ago, in April 1989, Hungary was a member of the political and military structure of the Warsaw Pact. Troops of the Soviet Union were stationed on Hungarian soil. The Hungarian People's Army numbered around 160,000 personnel in peacetime. Hungarian military expenditures exceeded 3.5 percent of its gross domestic product (GDP), although this figure was not made public, of course. Hungary was ruled by a one-party Communist system and had an economy based on centralized planning.

Today, in 1999, 10 years after the fall of the Berlin Wall, Hungary is a full-fledged member of the North Atlantic Treaty Organization (NATO), and preparations for its entry into the European Union (EU) are advancing at full speed. Hungary joined NATO on 12 March 1999, along with the Czech Republic and Poland. For these three countries, the road to NATO membership has been long and sometimes filled with tears and blood. In the last half century, each nation has demonstrated its desire for freedom: Hungary in 1956, Czechoslovakia in 1968, and Poland in 1980.

As full members of NATO, Hungary, the Czech Republic, and Poland will gain new advantages, but they also will assume new responsibilities. Each must adopt reforms to meet the new challenges of NATO membership, including reform of operational logistics. The success of each nation's participation in peacekeeping, peacemaking, and humanitarian actions depends on the

capabilities of its logistics system, both civilian and military. For Hungary, the logistics reforms needed for full participation in NATO are tied closely to its preparations for EU membership and its integration into the European economy. What follows is an examination of the logistics situation and emerging logistics changes in my country, Hungary.

Legacy of the Past

Before we analyze the current logistics system of the Hungarian Home Defence Forces (HHDF), we must understand its roots. We also must touch on the close historical connections between the civilian and military sectors of Hungarian society.

In World War II, almost the entire infrastructure of the country was destroyed. Hungarian creativity restored many things quickly and with great diligence. However, because of the Communist social and economic policies of the postwar decades, development was possible only in a limited way. After the havoc of the war, the nations of Western Europe were fortunate to have the Marshall Plan to help them rebuild. Hungary did not have the advantages of participating in the Marshall Plan. Instead, in 1948, Hungary's Communist-controlled government, along with the other "new Soviet Allies," undertook an ambitious plan to industrialize the country's economy, but without regard for its resources and capabilities.

Under the Communist economic structure, a distri-



□ This map shows the 10 logistics service centers planned for development by the Hungarian Government. Note how roads and railways in Hungary radiate out from Budapest.

bution system to meet the needs of the people was unimportant; the needs of the State were most important. The quality of life of the people did not play an important role in Government decisions. (Fortunately, the Hungarian standard of living was one of the highest in the Eastern Bloc). The nation's infrastructure, services, and technologies were not developed to benefit the people; instead, they were developed to support the needs of the State.

The interests of the Soviet Army, expressed through Hungary's civilian and military leaders, were paramount in Hungary. Hungarian telecommunications, transportation, medical services, electrical power, and water supply all served Soviet military needs first and foremost. An example of the power of the Soviet military was their request that the railways between Hungary and the Soviet Union not be "overdeveloped." (Today, these railways run into an independent Ukraine.) The general staff in Moscow said that it was good to have different railway gauges, since that would create a big mobility problem for NATO if it had to operate in Hungary. (The width between the rails in Hungary, like almost everywhere else in Europe, was 1,435 millimeters, but it was 1,520 millimeters in the Soviet Union.) This view prevailed over the need for good economic transportation links between the two countries. The Soviets thought that the cost of changing the wheels on every railcar moving across the border was acceptable if using different railway gauges would hinder the advance of NATO forces.

Hungary is divided into three regions by the rivers Danube and Tisza. From the Soviet military standpoint, because the Danube and Tisza had few bridges, they

formed good natural barriers to invading NATO forces. In order to support any troops that might have to operate in the Western theaters, the Soviet Army stationed a number of engineering units on the eastern side of the rivers, where they would be ready to build temporary bridges quickly when needed. When the Soviets ordered, "Don't build any new bridges over the Danube and Tisza rivers," because that would give mobility advantages to NATO troops, Hungarian leaders couldn't build any new bridges. From the 1950's until the mid-1980's, Hungarian Government plans to build new bridges were stopped by Moscow. It was only in the mid-1980's that Hungary finally was able to build a new bridge over the Danube. In these ways, the demands of supporting the Soviet military hindered the development of Hungary's infrastructure.

Under orders from Moscow, Hungary prepared to host a massive army. Despite what the Hungarian revolt in 1956 showed Moscow (perhaps that they could not continue to build Soviet-style Communism in Hungary), the orders continued to flow. Hungarian leaders (both civilian and military) executed those orders, but not quite as well, or as faithfully, as Moscow intended.

In the operational plans of that time, the role of Hungarian forces, as the southern wing of the Warsaw Pact, was to occupy the northern part of Italy by way of Austria. As an operational theater, Hungary played a secondary role by acting like a buffer zone for the Soviet Union and supporting the deployment of Soviet land forces to the west.

The buffer military role that the Soviet Union forced on Hungary, along with Hungary's Communist economic system and its inherited radial transportation sys-

tem (roads and railways radiate out from Budapest toward the borders and do not extend to all areas of the country), were the main reasons for the inadequate state of Hungary's civilian and military infrastructure in the early 1990's. Fortunately, this "poor" infrastructure is one of the most developed in Eastern Europe. (See map on page 45.)

The Inherited Military Infrastructure

In Hungary today, there are 35 to 40 military strategic storage warehouses and maintenance facilities. They are much smaller than a normal depot, and they usually are located in the middle of nowhere—far from a railway junction or main road crossing, far from towns, and far from the eyes of outsiders. They never have been civilian facilities and have not worked with civilians. They can be characterized as part of a ponderous and unaffordable system. These facilities are located mainly east of the Danube, in a northeast-to-southwest corridor.

Whatever the scale of operational plans, the warehouses and other installations were strategic, high-level resources under the Warsaw Pact and thus were under central control. Every service branch (clothing, cargo, fuel, transportation, medical, armor, weapon, vehicle, engineering, ammunition, aviation material, chemical, map, communication, and culture)—15 to 17 different material supply and maintenance services in all—had its own "central resources." That meant items were stocked not by material class but by the branch responsible for those items. This is still the case.

It is for these reasons that the HHDF today does not yet have a common stockline system, a material class system, a hazardous materials identification system, a priority code system, or a trustworthy item identification system. On top of all that, the equipment and weapon systems used by the HHDF are of many types and models. For example, there are 84 different versions of one vehicle type in use.

In the past, soldiers' hands were substituted for forklifts and cranes as the cheapest labor option. The inventory system was manual, without an item identification system that users could trust. Sometimes, when someone retired, the remaining personnel did not know how many items were held, what they were, and where they were held. Today, the warehouses very often are unequipped or poorly equipped buildings of older construction that lack modern technology.

In the HHDF, the Army traditionally has been allotted more resources than the Air Force. That is why our airfields also had poor facilities. Only a few of them—the ones used by aircraft everyday—had slightly better conditions. However, their facilities never were used for civilian purposes because they were located far away from civilians.

When Russian troops left Hungary between 1989 and

1991, the Federal Government of Hungary became the owner of the Soviet-used infrastructure. The poor condition and inconvenient locations of these facilities meant that they were largely useless for civilian purposes. Only a few found a new owner, usually for much less than the asking price. Today, you can find little villages in Hungary that have their own airfields, but those airfields have no air traffic—only a lot of environmental pollution problems. The reduction in size of the HHDF (from 160,000 troops in 1989 to 50,000 in 1998) has only exacerbated the decline of the military infrastructure. Most of that infrastructure remains empty and unused.

Improving Infrastructure—A National Goal

As a consequence of half a century under a Communist system, Hungary's transport and communication systems, water management, and other infrastructure have fallen behind those of Western Europe. However, the change of our political system and our transition to a market economy, which started with the democratic elections of 1990, opened new possibilities, including infrastructure development.

Half of every dollar investment that has come to the former Eastern Bloc in recent years has come to Hungary. These new investments cannot succeed without adequate infrastructure, so the biggest item in the state budget for the last 10 years (and for the next 10 years, too) has been the development of the infrastructure in Hungary. Public transport, railway and combined transportation, domestic water navigation, and goods transportation will be organized in an integrated logistics system.

The emphasis on infrastructure development reflects more than a general desire for economic growth. It also



□ A Hungarian convoy bound for the SFOR in Bosnia travels on a Hungarian road.



□ This Russian-made AN62 transport is only one example of the legacy of former Soviet material and installations inherited by the Hungarian Home Defence Forces at the end of the Cold War.

addresses a specific national goal: Hungary wishes to become a full member of the EU as well as NATO. For this reason, the civilian sector of Hungary—both the legal system and the infrastructure—follows EU guidelines while implementing fundamental changes. The main objective of the logistics development program is to build a logistics system meeting the most advanced European standards that fulfills all market needs.

To promote Hungary's entry into the EU, the national transport infrastructure needs to link Hungary more closely with international transport systems while also supporting the growth of a fledgling economy. If Hungary is to continue on its upward economic trend, it needs a highly developed transport infrastructure and a restructured industrial base to ensure integration into international trade and commerce. Government transport policy emphasizes the importance of ensuring that Hungary meets the requirements of transit by providing higher quality services. The Government also recognizes the increasing political importance of improving the national infrastructure to link Hungary more closely with the economy of the EU. The aim is to set up a modern logistics system that can supply the logistics needs of a geographical area with a good quality of service for the 21st century.

Changes in the Civilian Sector

In the last 10 years, the Hungarian civilian sector has changed very quickly. The modernization of civilian life has been going much faster than military modernization. There are many reasons for this, but the main one has been the need to respond to the requirements of the free market.

The successful privatization of industry, banking,

tourism, and the small and middle sectors of the economy has advanced significantly. Most importantly, the mentality of the people has changed quickly and thoroughly. Despite operating with a "poor" infrastructure, reforms in law and administration have created the basis for the recent economic progress of Hungary.

The infrastructure programs of the turn of the millennium focus on the intensive development of the public road network, paying special attention to the construction of sections of main roads that bypass populated areas and to the maintenance of existing roads. Despite the advanced age of railway tracks, vehicles, and operational equipment, modernization of transport has developed at a spectacular rate. Apart from airline and railway transport, which traditionally have used electronic systems, modern equipment is being used to an increasing extent in Hungarian domestic water and public road transport as well.

The main components of infrastructure projects will be financed primarily from the state budget. This means that the external infrastructure (public utilities and rail and road connections) will be the property of the public utility companies that will operate the facilities.

From the beginning of Hungary's economic transition through the second half of 1998, the domestic motorway and highway network increased by 38 percent. The role of public companies in transport has been reduced significantly, and the transportation of goods on public roads now is almost entirely privatized. The businesses performing scheduled passenger transportation on public roads are owned entirely or mainly by the Government or local councils. The public road management and public utility companies of the counties, which maintain and operate the national network of pub-

lic roads, are small or medium-sized companies, which, to an increasing extent, operate on a tender basis.

In spite of increased use of public roads, the ratio of railway transportation to all modes of transport is twice the EU average, both in passenger and goods transportation. Coach traffic, including city bus transportation, also is above the EU average. The Government departments strive to provide transportation methods and technologies that are less threatening to the environment. To pave the way for Hungary's integration with the rest of Europe, Hungarian transport policy places special emphasis on protecting both the human and natural environments. Partly as a result of an increased awareness of environmental concerns, transportation by rail today accounts for 35 percent of freight transportation.

Because of the emphasis on infrastructure development, the reform of the HHDF has involved more reduction than modernization. In the state budget, the HHDF received less than 1.4 percent of the GDP in 1997. This was less than what was needed, so the budget will be increased by 0.1 percent of GDP each year in order to reach 1.8 percent of GDP by the year 2001.

Need for Multipurpose Projects

Ten years ago, every Federal department had its own military special section, where the military could support its own requests for things that the civilians had to build into their plans. For example, if the Ministry of Transportation or the Ministry of Industry wanted to develop a project, or change something in law or policy, they had to ask the opinion of the "special" military section. They had to compromise with the requests of the military. The best result was multipurpose use projects that supported both civilian and military purposes.

At the beginning of the 1990's, as a result of antimilitary feeling, most of those special sections were reduced. The idea of multipurpose use projects was forgotten. The absence of military sections, together with reductions in the military budget, meant that the Ministry of Defence did not determine its priorities for incorporation into new infrastructure development projects.

Recent civilian projects include two new bridges across the Danube, a (half) circle highway ring around Budapest, a brand new international airport terminal in Budapest, a few hundred kilometers of brand new highways, and hundreds of kilometers of railway and road modernization. All were developed within the new EU norms. However, sometimes the results of this infrastructure development did not enhance Hungary's military capability within NATO. For example, the capacity of the bridges of the highway ring around Budapest cannot support a fully loaded military tank transporter.

Those projects are complete, but there are more underway, and there will be many more when consider-

ation is given to EU infrastructure requirements.

Building Modern Logistics Centers

The geographical location of Hungary is not the same as her geopolitical location. Hungary traditionally has been in the heart of Europe, but today it is on NATO's forward edge, and tomorrow it could be the EU's border. Hungary is in the center of the flow of trade and transportation across Europe.

From the point of view of the EU, this means that Hungary will be the land border for trade between the EU countries of Western Europe and the nations of Eastern Europe (and beyond them the countries of Asia as well). If Hungary joins the EU in the near future, as expected, its membership will increase the need for high-value services for producers, distributors, and consumers, operators of services, and transportation companies.

This future as the EU border, together with the new quality of logistics in industry, will require a new distribution system. In 1993, after analyzing future transportation requirements in conjunction with future local logistics needs, the Hungarian Cabinet approved the concept of setting up a network of logistics centers to support the development of the national economy. The German Government helped to prepare those projects, which will result in a modern logistics service support system (infrastructure, carriage, manpower, and technology) in the different areas of Hungary.

This type of logistics center can be found in Western Europe, North America, and the Far East, usually where different modes of transportation meet each other. Such centers are the result of the technological revolution developed since the 1960's. In the 1980's, when competing for customers in the international marketplace intensified and delivery times became critical, industry started to use integrated logistics service centers to create service bases closer to markets. In this way, industry is better able to act to meet the changing demands of customers. The "just in time" method of distribution, made possible by new computer technologies, gives these logistics centers a big lead in international competition. Today, cities such as Rotterdam, London, Paris, New York, Bologna, and Bremerhaven, with their intermodal logistics service complexes, are not only consumer logistics centers and production centers; they also serve military users, supporting their deployments or their daily peacetime logistics needs.

The Hungarian concept is for a combined transport network of up to 10 logistics centers, of which Budapest, Záhony, and Sopron will be the most important ones. (See map on page 45.) The Sopron terminal already is well known to international freight traffickers. The Záhony and Budapest terminals, each lying on one of the busiest transit routes in Europe, have attracted



□ The Hungarian engineering battalion in Bosnia has built 22 bridges. Hungary has participated in the IFOR and SFOR missions—a harbinger of the future.

considerable interest. In designing these logistics centers, experts have taken into account domestic and international freight traffic data and economic indicators and forecasts, while planners have considered international experience, regional development plans, and the need to use the infrastructure to the fullest. A few of the logistics service centers, after they are joined to the EU infrastructure network, will assume the role of logistics land border gates between the EU and Eastern Europe.

Fitting Into NATO

The common NATO mobility standards are very high and are going to be higher. Of all NATO members, only Luxembourg and two of the newest members, the Czech Republic and Hungary, have no exit to the sea. However, all of the countries bordering Luxembourg are NATO members, and the Czech Republic can use the seaports of its NATO neighbors, Germany and Poland. Hungary does not border any member nation of NATO and thus is something of an "island country" within

NATO. As a result, Hungary has higher mobility requirements than the other NATO members.

In Hungary, we are well aware that we still have a long way to go to achieve full interoperability with the rest of NATO. The HHDF already have joined NATO's joint defense planning system as an invited country. Accordingly, Hungary has made a medium-term political and military commitment, for the period from 1999 to 2003, to fully or partially accomplish 48 different target force goals.

These plans concentrate primarily on the areas that are the most important to Hungary's integration into NATO. They include language training; high-level command, control, and communications; host nation support; inclusion in NATO's integrated air defense system; preparation of reaction forces; and participation in NATO's defense intelligence information exchange.

Hungary Supports NATO

The new requirements for host nation support, together with the new requirements for a deployment capability for Hungarian troops, mean a big challenge for the HHDF. Fortunately, Hungary has some experience in the area of host nation support. The NATO-led peace support operation in Bosnia has been proceeding for several years with Hungarian soldiers serving under a multinational command. At the same time, Danish, Finnish, Norwegian, Polish, Swedish, and U.S. soldiers carry out their tasks on Hungarian territory and receive host nation support from Hungary.

Three years ago, two logistics bases were set up in the southern part of Hungary to support the Implementation Force and Stabilization Force (IFOR and SFOR) troops deployed in Bosnia. One of them is an American logistics base at the Tazsár military airfield. The other one, in Pécs, is a multinational logistics base supporting the North Multinational Brigade (composed of forces from Denmark, Finland, Norway, Poland, and Sweden).

Today Hungary has an engineering battalion in Bosnia, at Okucani. Supporting this unit of 400 soldiers, only 180 kilometers from Hungary, has required a big effort from all of the HHDF. In the course of the IFOR and SFOR operations, the Hungarian engineering contingent has carried out 200 tasks of different types. It has constructed 22 bridges and 65 kilometers of railroads and helped to reconstruct public main roads. In addition, it has carried out mine-clearing activities.

In the Kosovo crisis, Hungary provided additional host nation support, permitting her airports and airspace to support the airstrikes against Yugoslavia. Twenty-four F-18 Hornets and 3 A-10 Thunderbolts used the U.S. airbase at Tazsár, and 20 KC-135 tankers airlifted to the Ferihegy 1 airport of Budapest to support the air

attack. (These aircraft have returned to the United States.) Hungary also sent a medical team to Kosovo to protect refugees from epidemics and 350 troops to guard the Kosovo Force (KFOR) headquarters in Pristina.

Integrating Civilian and Military Needs

At present, Hungary's infrastructure cannot always support the very high mobility requirements and the new tasks and missions facing the nation as a new NATO member. However, it is not necessary to build whole new infrastructure elements for the military because the civilian sector already has begun to develop solutions to its logistics infrastructure needs. What will help Hungary integrate into the EU also will help Hungary integrate into NATO.

Only three of the available civilian logistics service centers are able to provide for a very important military need, that of support to air movements as airports of debarkation and embarkation. They are Budapest, Székesfehérvár, and Szolnok, which incorporate civilian or military airfields. Every airfield needs some reconstruction and modernization for military use.

The benefits will be greater (and cheaper) if military improvements can be integrated with the civilian logistics development projects. As part of the official economic development program, the logistics centers (including the three with airports) will operate as industrial parks to promote the development of the national infrastructure. This complex program requires cooperation among different transportation modes and a sound transport policy based on harmonization. The Ministry of Defence needs to prepare contracts to use the capabilities of these centers to establish a modern, strategic central depot system that has modern computer technology support. There should be no more than 2 or 3 depots, which will permit the disposal of the 35 to 40 old bases and warehouses. The state will play an important role in developing infrastructure (both civilian and military) by providing funds for building up the external infrastructure linking the sites to public utilities.

Hungary's new military mobility requirements as a member of NATO require a new agile and trustworthy logistics infrastructure. Civilian logistics centers and systems are growing rapidly, but unless they include military requirements they will not be able to serve the nation successfully. As part of the NATO Security Investment Program (NSIP), and with the financial help and experience of our Allies, we intend to invest in big military projects. Under the NSIP program, we developed the requirements for three groups of projects to support interoperability with the other NATO members, in the areas of communications, air radar, and airports. They all are very complex and expensive projects, but they will determine the future capability of the HHDF and affect the future capabilities of the other NATO

countries.

The idea of multipurpose systems has to be given a new chance, but sometimes we in Hungary are afraid to develop such systems. The first reason, as I mentioned earlier, is the "antimilitary" feeling that grew up in the last 10 years. The second is the lack of a history of military-civilian cooperation. Close cooperation with civilians presents a new challenge for the HHDF. However, success in cooperation will be to the benefit of all NATO members. Eleven members of NATO also are full members of the EU, so they have an additional interest in seeing that Hungary develops the new multipurpose (civilian and military) infrastructure projects.

There are several important areas in which, now or very soon, we will have to develop our civilian logistics infrastructure. One of them is the transportation network. Here we are going to plan some brand new lines, including the new rail and road connection with Slovenia. There is presently no rail connection between the two countries. This connection is very important to give access to the nearest seaports, on the Adriatic Sea. It also is important to have a rail connection with the rest of NATO via Italy. Hungary already has experienced some military transportation problems from the lack of such a connection, when Austria did not let the HHDF move through her territory to a NATO exercise in Italy.

Another area is the development of the logistics service centers. The availability of airports of debarkation and embarkation, depots, and other installations will form a modern, 21st century logistics system. They can be bridgeheads of host nation support and provide the main strategic logistics resources of the HHDF to support missions far away from home, including aid in times of natural disasters.

The infrastructure being developed will reflect a strong linkage between the logistics needs of both the civilian and military sectors. That in turn will be based on the new strong spirit of cooperation. In Hungary, we are aware of our special geopolitical situation. Hungary has become the NATO member closest to Yugoslavia and the Balkans. For Hungary, this means both responsibility and opportunity: to contribute to the solution of conflicts through our historical experience. **ALOG**

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Out-of-the-Box Logistics

by Major Hurmayonne W. Morgan and
Lieutenant Colonel Gerald A. Dolinish

Based on their experience with an echelons-above-corps unit in Europe, the authors believe that the future of logistics support lies with task forces organized in nontraditional ways.

Decisive superiority in any battle, whether it is actual combat or an exercise at a combat training center (CTC), ultimately depends on support provided by outstanding soldiers like those of the 51st Maintenance Battalion in Mannheim, Germany. The highly trained and motivated soldiers of the "Victory Battalion" stand by their motto, "Victory Through Support."

CTC's are the most significant training concept developed by the Army in the past 20 years. They provide soldiers and leaders opportunities to exercise warfighting skills in a realistic yet controlled environment. These centers also provide occasions for warfighting units to integrate into task forces and for support units to realign to support them. A perfect example of this integration occurred when an echelons-above-corps (EAC) unit, the 29th Support Group (also known as Task Force Log), in Kaiserslautern, Germany, acted as the command and control headquarters in the division support area (DSA) of the Combat Maneuver Training Center (CMTC) in Hohenfels, Germany, during CMTC 98-08 in the summer of 1998. Elements of the 51st Maintenance Battalion and the 191st Ordnance Battalion augmented this brigade-sized headquarters. The remainder of the 51st Maintenance Battalion, also known as Task Force 51, located 104 kilometers from Hohenfels in Amberg, Germany, functioned as a forward support battalion in the brigade support area (BSA). The traditional EAC logistics unit—the 29th Support Group plus elements of the two battalions—task-organized into a multifunctional logistics unit to support the Southern European Task Force's (SETAF's) Lion Brigade, which was augmented by heavy forces, such as the 1st Infantry Division's 1-63d Armor Battalion (Heavy), during their first-ever combined light and heavy rotation.

Planning

Designing the proper logistics task force for this rotation began with a detailed look at the aviation, armor,

artillery, and light infantry forces that would be integrated into one fighting force. Several train-ups were required, which took more than 10 months, because the elements of the task force were spread out in Germany and Italy. During that time, key staff members and commanders changed.

We determined that the best way to support an ad hoc unit during the CMTC rotation would be to integrate the logistics forces, then task-organize them to support the maneuver unit. At the same time, the battalion Support Operations and S3 elements were redesigned and augmentees were added as planners. These units, as part of Task Force Log, conducted DSA operations throughout the rotation. Task Force 51 acted as a forward support battalion in the BSA.

The SETAF Lion Brigade, Task Force Log, and Task Force 51 deployed to Hohenfels for the initial train-up. The "logistics of the logistics" for the initial train-up was challenging. Task Force 51 traveled by rail from Mannheim and Kaiserslautern, Germany, and other elements traveled by wheel. During the train-ups, we focused on ways to maximize the use of Standard Army Management Information Systems (STAMIS's), such as the Standard Army Maintenance System (SAMS) and the Standard Army Retail Supply System (SARSS), and the Defense Transportation Recording and Control System (DTRACS) to enhance the warfighting capability of the Lion Brigade.

Maintenance

Our goal was to roll up 22 ad hoc, company-sized units into one for the purpose of generating a consolidated not-mission-capable maintenance report (026 deadline report) by SAMS. Units delivered Unit Level Logistics System (ULLS) disks to the BSA daily for processing on the SAMS computer, which was provided by the Lion Brigade's forward support company. Requisitions for normal prescribed load list items were filled on



□ Soldiers of the 51st Maintenance Battalion repair an M1 Abrams tank at a unit maintenance collection point.

site by the servicing supply support activity. Requisitions for high-priority parts were expedited using the 200th Theater Army Materiel Management Center's SARSS computer terminal. The goal was to ensure that the Lion Brigade Task Force began offensive and defensive operations with 90 percent of their combat systems in mission-capable condition.

Supply

We developed our estimates for the appropriate classes of supply based on a 3,200-soldier force. The 512th Maintenance Company, augmented by the 574th Supply and Services Company (-) (both 51st Maintenance Battalion units located in the DSA), acted as a transportation company as well as a supply company.

Class I (subsistence). The 512th and the 574th used their internal assets to receive, store, and distribute rations over an approximately 100-kilometer radius on a 3-day, 2-day, 3-day cycle of T-rations and meals, ready to eat.

Our bulk water production, distribution, and storage operations included one 3,000-gallon-per-hour and one 600-gallon-per-hour reverse osmosis water purification unit (ROWPU). Together, they purified 72,000 gallons of water from the Vils River per day, which was distributed by semitrailer-mounted fabric tanks (SMFT) to the BSA located approximately 15 kilometers away. We set up two onionskin bags inside the combat trains of Task Force 1-508th Infantry (Light), a subordinate unit of the Lion Brigade, for water distribution and storage within the maneuver rights area, also called "the box" (the area that had been made available for our use by Germany).

Class II (clothing and individual equipment). Task Force 51 developed a contingency package of organizational clothing and individual equipment, which was manu-

ally hand-receipted from a central issue facility in Mannheim, to support soldiers who may have lost items during the intensive training for the CMTC rotation. Units were required to bring a 30-day supply of other class II items.

Class III (petroleum, oils, and lubricants [POL]).

Task Force 51 deployed with nine 5,000-gallon tankers and a 24-point refuel-on-the-move capability. Based on the nondoctrinal geographic locations of the DSA and the BSA, Task Force Log maintained five tankers, one of which was devoted exclusively to supporting Task Force Aviation, another element of the Lion Brigade's combat team, during different phases of the battle. The Lion Brigade's S4 required units to deploy with 15 days' worth of packaged class III. Task Force 51 used the Integrated Logistics Analysis Program to locate critical packaged class III, which had been identified previously by the Lion Brigade's 1-63d Armor Task Force. This initiative paid large dividends in the end.

Class IV (construction and barrier materials). During the initial planning phase, units identified and preconfigured class IV packages that would be called forward on an as-needed basis during battle. Task Force Log, in its DSA capacity, controlled and distributed class IV that had been throughput to the Lion Brigade.

Class V (ammunition). The 5th Maintenance Company, a subordinate unit of the 51st Maintenance Battalion located in the BSA, managed all ammunition transfers in the BSA. This was a nontraditional function for this company, but it proved to be an expedient way of getting the job done. The 23d Ordnance Company, a 191st Ordnance Battalion unit, managed ammunition in the DSA at Hohenfels.

Communications. The 44th Signal Battalion, 7th Signal Brigade, 5th Signal Command, of Mannheim, brought to the rotation a robust signal package that used tactical

phones and a local area network (LAN) to place and receive Internet, email, and local Defense Switched Network (DSN) communications. Most importantly, the package provided both LAN and DSN lines that were used to input data to SARSS.

Because we are Ordnance officers, SAMS, ULLS, and SARSS are our first loves; however, DTRACS proved to be the system of the day. Our original intent was to track logpacks, which were traveling 104 kilometers twice daily. However, we also needed to be able to receive information about deadlined vehicles. Because of the distance from the BSA to the unit maintenance collection point, we could not receive timely information about deadlined tanks via SAMS, ULLS, or SARSS. DTRACS not only facilitated transfer of information on deadlined warfighting vehicles, it also allowed the logistics headquarters to track casualties, exchange battlefield tactics, and counter hostile situations that threatened the transfer of ammunition in the BSA.

Other Challenges

Task Force 51 overcame many other challenges during the CMTC rotation. For example—

- How would we defend the BSA from attack while continuing logistics operations? The 330th Rear Tactical Operations Center base defense liaison team, which normally does not operate at battalion level, provided BSA security with three high-mobility, multipurpose, wheeled vehicles (HMMWV's) that had mounted machineguns.
- How would we overcome the need for working with lines of communication (LOC's) that exceeded doctrinal distances by more than 75 percent? The average LOC is generally 10 to 15 kilometers. During the CMTC rotation, the LOC between Amberg and Hohenfels was 63 kilometers. Proper planning, synchronization, and use of DTRACS helped to overcome the obstacle posed by the excessive distance.
- How would the 51st, a functional maintenance battalion, formulate and support a medical plan as an FSB? We relied heavily on the capabilities of the forward support company and a medical planner from the 30th Medical Brigade, a corps asset.
- How would we provide fuel for Task Force Aviation, which was located 104 kilometers from the BSA? Because of the nondoctrinal distances, we used DSA assets to throughput fuel straight to Task Force Aviation's forward area refueling point.
- What would happen if we underestimated packaged class III requirements? It became apparent during the train-up that we had underestimated POL requirements, and it was even more apparent during the actual rotation. Our advantage was early identification of critical packaged class III requirements by location and a solid plan for a Red Ball Express-type delivery sched-

ule, which was executed by the 5th Maintenance Company (-) during the rotation.

Achievements

All in all, what did Victory Battalion achieve at CMTC rotation 98-08? The Lion Brigade began defensive and offensive operations with 90 percent of its combat power. We successfully achieved STAMIS connectivity for the first time at the CMTC. We successfully used a theater maintenance company to transfer 100 tons of ammunition without incident. We transported 115,000 gallons of fuel and 100,000 gallons of water, distributed more than 76,800 meals, and processed more than 250 mock casualties in an 8-day period. We successfully expedited more than 800 requisitions for high-priority parts. We used direct support assets from the 701st Main Support Battalion's Forward Support Company and internal assets from the 51st Maintenance Battalion to drive more than 1,664 accident-free kilometers. Task Force 51 proved that when you are "in the box," you have to think, plan, and support "out of the box."

Tailoring logistics packages to support ad hoc units is the course of the future. Nontraditional is becoming traditional. The relationships of the 29th Support Group to SETAF and the 51st Maintenance Battalion to the Lion Brigade are clear indications that functional battalions located in the theater can and will provide support in nontraditional and nondoctrinal areas. The functions of EAC units are not limited to managing port operations, moving units into a theater, or remaining in garrison to support units that do not deploy. These units are trained, flexible, and ready to support contingency operations throughout the U.S. European Command's theater of operations.

ALOG

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SYSTEMS

The information presented in Army Logistician's 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@lee.army.mil or phone (804) 734-1207 or DSN 687-1207.

ARMY LOGISTICS SYSTEMS READY FOR Y2K

Computer experts believe that some computer systems will experience a serious glitch on 1 January 2000, causing them to malfunction or otherwise fail. This glitch is a combination hardware and software problem caused by the system's internal calendar and clock, the BIOS [basic input/output system] that makes a computer unable to differentiate between calendar date 2000 and any other year ending with 00. The glitch could cause an Army computer to produce nonsense when making such calculations as days between maintenance services, dates of requisition, or the age of a work order.

Y2K is a worldwide concern, and Army logistics systems are not immune. The Y2K fix for Army logistics systems is threefold: identification and replacement of noncompliant hardware, Y2K software renovation and testing, and continuity of operations plans or contingency planning. Hardware and software solutions fall under the purview of the Program Manager, Global Combat Support System-Army (PM GCSS-Army), and its headquarters Program Executive Office, Standard Army Management Information Systems (PEO STAMIS). Contingency plans are the responsibility of the Information Systems Directorate at the Army Combined Arms Support Command (CASCOM), under the direction of the Deputy Chief of Staff for Logistics, Department of the Army. The Army has dedicated considerable resources to deal with Y2K problems, and leaders need to be aware that these resources are available.

Hardware. The computer hardware fielded for logistics systems is commercial off-the-shelf hardware similar to that used in private industry or in our homes. Systems fielded in the last few years in the Intel Pentium family are generally Y2K compliant. The problem lies

with older platforms, such as 486 and older systems. Not all older systems will have Y2K problems, so it is prudent to test their worthiness before disposing of them. By now, your command probably has tested all of its systems, including yours. If not, you can run the Microsoft Diagnostic (MSD.exe) program to determine if your system is Y2K compliant. You can get a copy of this program from your combat service support automation management office (CSSAMO) or other systems support agency or official contractor. PEO STAMIS is responsible for logistics systems hardware. Their website, <http://www.peostamis.belvoir.army.mil/tacmis/Y2K.htm>, contains a step-by-step process that will determine if your hardware is Y2K compliant. You should consult your system support headquarters before loading any new BIOS or other hardware upgrades.

Software. Logistics software applications have been tested and modified to make them Y2K compliant. Again, consult your CSSAMO or system support headquarters to see if you have the correct version of software. If there is no CSSAMO in your area, call the Software Development Center Lee Customer Assistance Office at (804) 734-1051 or DSN 687-1051.

Contingency Plans. Logistics systems contingency plans for Y2K provide continuity-of-operation procedures to follow in case your system or related systems fail. The contingency plans may be manual back-up methods for performing logistics functions, or they may be automated methods that use office automation tools. Following these plans will ensure a more rapid return to automated processes when systems are restored. Contingency plans for each logistics system can be found on the CASCOM website at http://www.cascom.lee.army.mil/automation/Y2K_Contingency_Plans/.

General Considerations. Y2K preparations should be conducted in a methodical fashion. The following are general guidelines that resulted from planning for Y2K at PEO STAMIS—

- Step 1: Awareness. Make sure that your activity or unit is aware of the possibility of systems failure due to Y2K.
- Step 2: Assessment. Ensure that your activity's systems have undergone Y2K testing and that your hardware is Y2K compliant.
- Step 3: Renovation. Check to see that the proper version of software is loaded.

STATUS OF LOGISTICS SYSTEMS SOFTWARE

SYSTEM	CURRENT SOFTWARE VERSION	Y2K COMPLIANT
ULLS/SPBS		
Ground	L3Q-07-00(To be replaced by GCSS-Army)	Yes
Aviation	L3P-02-01 (Released July 99)	Yes
S4	L3S-00-05 (Released August 99)	Yes
SPBS-R	L18-11-01 (Released July 99)	Yes
SAAS-MOD		
Block 1B	L6F-01-18 (L6F-01-19 in planning stages; no release date set)	Yes
SAMS		
SAMS-1	10.00 (Being replaced by Rehost)	No
SAMS-2	10.00 (Being replaced by Rehost)	No
Rehost	11.00	Yes
I/TDA	2.0	Yes
SARSS		
SARSS-1	L1Y-03-18	Yes
SARSS-2AD	L14-03-12	Yes
SARSS-2AC/B	L1Q-03-17	Yes
SARSS Gateway	L8U-06-06	Yes
ILAP		
Unit	5.3	Yes
Installation	2.04 (2.05 scheduled for November 99 release)	Yes
Corps	2.04 (Released June 99)	Yes
MACOM	2.04 (Released June 99)	Yes

Legend:

ILAP	= Integrated Logistics Analysis Program
I/TDA	= Installation/Table of Distribution and Allowances
MACOM	= Major Army Command
SAAS-MOD	= Standard Army Ammunition System-Modernization
SAMS	= Standard Army Maintenance System
SARSS	= Standard Army Retail Supply System
ULLS/SPBS	= Unit Level Logistics System/Standard Property Book System

- Step 4: Validation. Make sure that your activity's systems are checked out by the CSSAMO.

- Step 5: Implementation. Ensure that your activity has the general contingency plans published by CASCOM and specific, local contingency plans for workarounds and alternate manual procedures. A key element overall in the Army is reporting. The first report of logistics systems failures should be sent to the CSSAMO or other command-designated support agency. The CSSAMO will call the Customer Assistance Office at Fort Lee and its major command representative if Y2K failure is suspected. The Customer Assistance Office

will determine if it is a Y2K problem and notify the program manager of the particular system. The program manager will advise Headquarters, Department of the Army, of the extent of the problem and the proper course of action.

Y2K is coming, whether we are ready or not. Being prepared depends on leaders and managers knowing and enforcing hardware and software assessments and ensuring upgrades take place. Leaders also must ensure that contingency and emergency plans are realistic and that training is provided for soldiers and units executing those plans. (See related stories on pages 60-61.)