ARMY LOGISTICIAN

JANUARY-FEBRUARY 1981

Organizing Army Logistics—page 2

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ABOUT THE COVER

The cover painting depicts the theme of the article beginning on page 2. That article reviews reorganization efforts to achieve better management of the Army Logistics System. The author, a former DCSLOG, says those efforts failed by not putting someone in charge of the total logistics system.

ARMY LOGISTICIAN

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ARTICLES

DEPARTMENTS

Army Logistician is devoted to the publication of timely, authoritative information on Army and Defense logistics for the Active Army, Army National Guard, Army Reserve, civilian employees of the Army, and the public. Our purpose is to increase knowledge and understanding of logistics and to encourage and stimulate innovative thought in areas of logistics by providing a forum for those ideas. The views expressed in the articles are those of the authors and not necessarily those of the Department of Defense or the Department of the Army.

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Articles, photographs, illustrations, and items of interest on any facet of Army logistics are invited. Direct communication is authorized to: Editor, *Army Logistician*, Army Logistics Management Center, Fort Lee, Va. 23801.

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A LOG EMPHASIS

DOD FUEL PLAN DEVISED

The Department of Defense (DOD) has designed a fuel supply plan to maintain readiness and avert shortages in the event of a disruption in oil imports. The plan calls for trading Government crude oil from the outer continental shelf and naval petroleum reserves with refiners for jet and other military fuels, maintaining long-term DOD contracts with small refiners, using synthetic fuels, and obtaining DOD priority for emergency fuel allocations, if necessary. The DOD is working with other Federal agencies to define explicitly the conditions that would trigger emergency allocations.

PARTS STORES CONTRACTED

The Army Training and Doctrine Command (TRADOC) has established a contract-operated parts store at Fort Dix, New Jersey; Fort Belvoir, Virginia; and Fort Rucker, Alabama. Each store supplies commercial-type vehicle parts and functions as a branch of the shop supply section under the installation maintenance officer. The stores are cost-effective, primarily because the cost of inventory is shifted from the Government to the contractor.

USAREUR BUYS GERMAN MHE

The Army has approved the use of $4.2 million to purchase German-made materials-handling equipment (MHE) for use by U.S. Army, Europe (USAREUR). The equipment will replace aging forklifts as well as fill current shortages. Use of the German MHE will improve interoperability between the United States and German armies. The new equipment could be in use by the end of fiscal year 1981.

PATRIOT IN PRODUCTION

The Army has awarded a $228-million contract to the Raytheon Company, Lexington, Massachusetts, for limited production of the Patriot air defense system. Two years of testing will be conducted to verify the reliability of the system. Test results will determine whether full-scale production will proceed.

LOG CHAIR AT WAR COLLEGE

The Army War College has established a chair of logistics in the name of General Brehon Burke Somervell, who directed Army logistics during World War II. A college spokesman said that the designation of the Somervell Chair of Logistics will call attention to the importance of applying management techniques to the logistics component of land warfare.

(Continued on page 46)

Perspective—

Organizing Army Logistics

by Lieutenant General Jack G. Fuson, USA (Ret.)

The author claims that two major Army reorganizations in the last 20 years have not produced an effective and efficient Army Logistics System. He states his reasons and proposes a solution for the basic problem.

Is the Army's Logistics System organized and managed effectively and efficiently for peace and war?

A review of General Accounting Office, Army Audit Agency, and Office of the Secretary of Defense audit reports over the past several years seems to indicate "no." The same findings and recommendations keep reappearing, yet the problems are not being solved; in fact, the trend continues. Certainly, the Army is not just ignoring these findings and recommendations, but rather, there must be a much more basic cause for the continued trend.

Restrained budgets, which are a fact of life in peacetime, are a contributing factor, but this alone would not cause this continued problem. The same findings and recommendations were also made during the Vietnam War.

What then is the basic problem?

Based on my overall military experience and on my final assignment as the Deputy Chief of Staff for Logistics, DA, it is my belief that the Army Logistics System is not organized properly to accomplish its missions. As a result the system cannot be effectively or efficiently managed either in peacetime or in wartime. If the United States were suddenly thrown into a major war, the Army Logistics System would have to be reorganized as was done for both World Wars I and II. The major difference is that this time, time would not be available to us to reorganize.

A look at how the system was organized and operated before 1962 and then subsequent to 1962 is needed to provide insight into the problem. Since 1962, there have been two major Army reorganizations that had a significant impact on the problem: Project 80 in 1962 and 1963 and Operation Steadfast in 1972 and 1973.

Before 1962, the U.S. Army was organized along technical service lines for logistics. There were seven technical services: ordnance, quartermaster, signal, engineer, chemical, medical, and transportation. Each service was responsible for certain commodities and certain services, and they were responsible worldwide. The chief of ordnance, for example, was responsible for the major war-making items such as guns, tanks, trucks, ammunition, and so forth. He managed ordnance personnel and the training system worldwide. The other chiefs did likewise for their commodities and services.

Although their true expertise was here in the continental United States (CONUS) base, and consisted of military, civilians, and the large industrial base, they organized, trained, and deployed technical service units worldwide to carry out their system in the field. They were responsible down to the forward edge of the division direct support units and through this organization were able to look forward to the combat units and assist them in their logistics mission. They operated this system worldwide, were responsible for it, and disciplined it.

Under the technical service system, the services had

their own budgets which accounted for well over half of the Army's appropriations. They controlled their own organizations, procedures, personnel, intelligence, training, and planning functions. Their dissimilarities were as marked as their similarities.

Their differences generated a prodigious amount of red tape, making it difficult for the Department of the Army to control their operations and for industry to do business with them. Because of these problems and others, the Army desired to change from these seven different supply and maintenance systems to a single functional system: a standard supply and maintenance system. Certainly a fine objective!

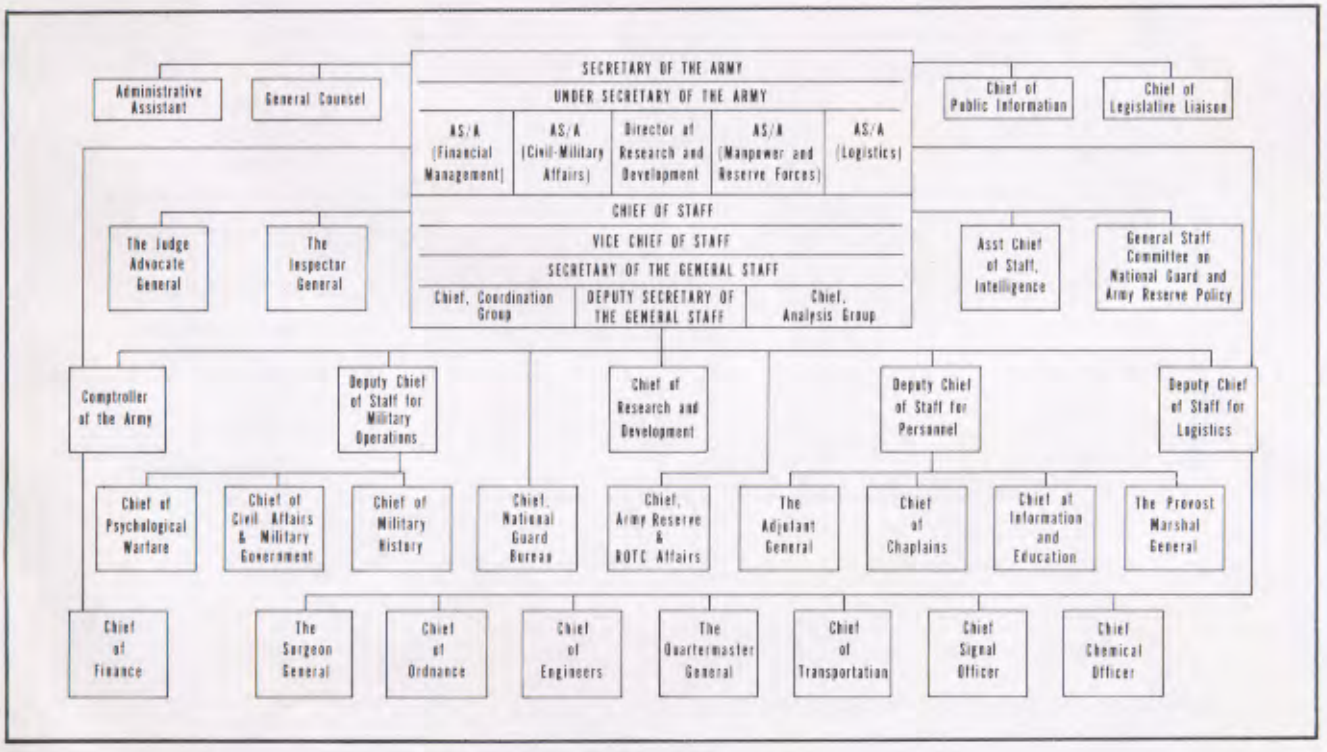
In 1963, Secretary of Defense Robert McNamara approved the implementation of Project 80, which changed many things in the Army, especially the logistics system. Although the Secretary's guidance for Project 80 was broad, he did ask the study group to look at the perennial question of how much should the Army Staff be involved in operations and should the technical services be subordinate to a "service command" or be replaced by a "research and development or materiel command."

As a result of Project 80, the U.S. Army thoroughly reorganized its entire structure. It reorganized Army logistics along functional lines rather than technical service lines. Personnel and training responsibilities were removed from the technical services and centralized within the Army.

The technical services, with two exceptions, were abolished. Their missions, functions, and responsibilities were reassigned either to the U.S. Continental Army Command (CONARC), whose missions and responsibilities were broadened, or to one of two new commands—the Army Materiel Command (AMC) and the Combat Developments Command (CDC)—or to the theater army commands. Similar missions and functions of the combat arms were reassigned on the same basis. This organizational structure ignored retail logistics system management and the necessary relationship between the producer and the consumer.

The Combat Developments Command was responsible for determining materiel requirements, how the Army was to fight, and how it should support itself in the field. The Continental Army Command was to translate the Combat Developments Command concepts and doctrine into training manuals and procedures for both individuals and units and provide the appropriate school training.

The wholesaler or producer part of the technical services was regrouped under the U.S. Army Materiel Command (now the U.S. Army Materiel Development and Readiness Command). It was given the responsibility for the CONUS wholesale base only, with no retail responsibilities overseas or to the Army in the field. The theater commanders were responsible for operating their own system independently from the CONUS wholesale base. Almost immediately the system switched from seven well-disciplined systems worldwide to a different functional organization in each theater



Department of the Army organization before Project 80 in 1962.

and systems that were separated from the wholesale base.

Overnight a wall was placed between the wholesale CONUS base and each Army in the field's logistics system. The CONUS base continued to operate the wholesale system with their expertise—military, civilian, and industry—but the theater commanders attempted to operate their logistics systems, maintaining the complex equipment in the field, with soldiers who had very little training and experience compared to the career personnel in the CONUS base. (Subsequently, some integration of functions has occurred. The DARCOM is performing depot level maintenance in Europe; DLA is involved in subsistence, POL distribution, and property disposal worldwide; and MTMC operates ports worldwide.) All of this was in accordance with doctrine and training supposedly developed by the Combat Developments Command and the Continental Army Command.

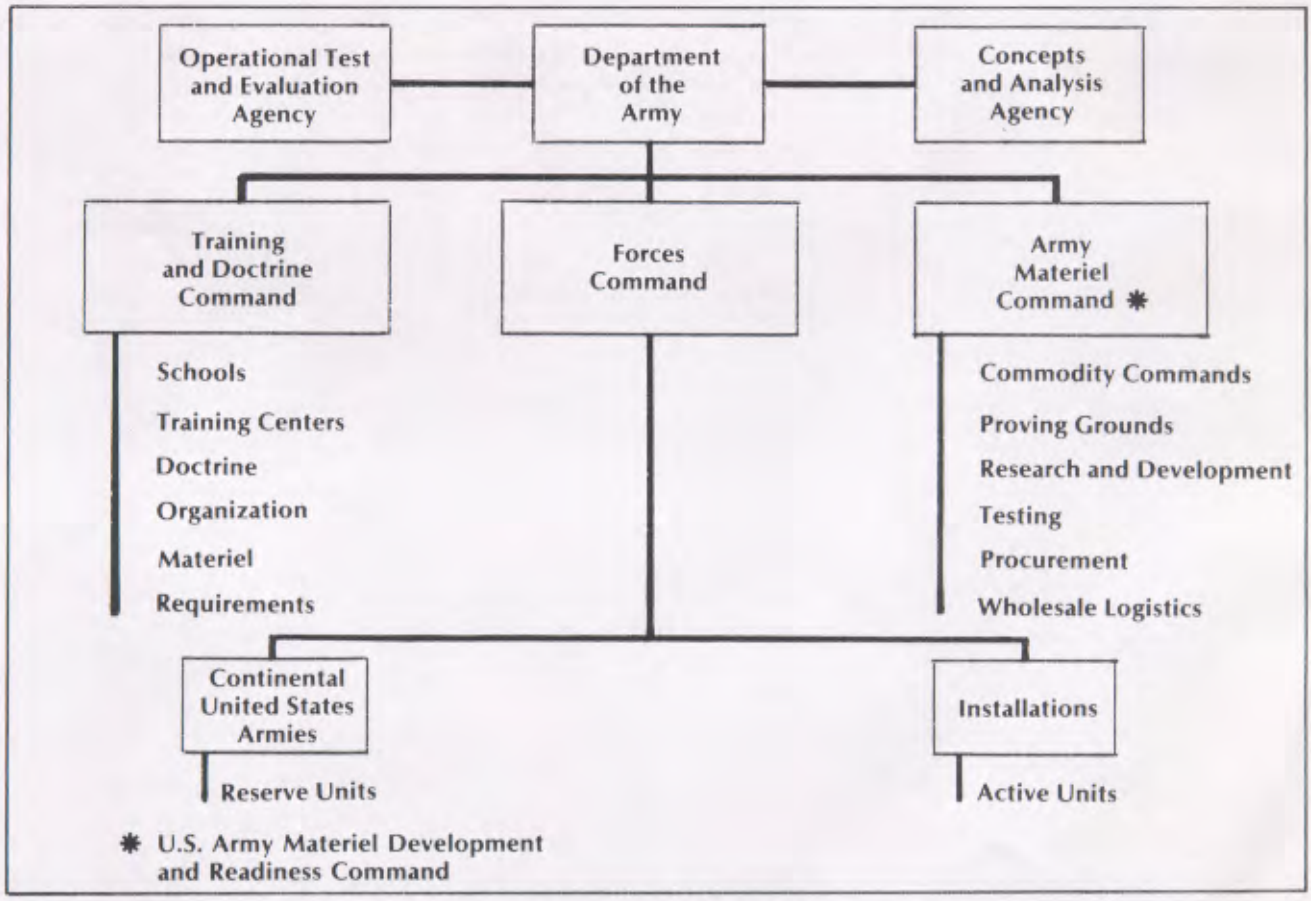
The study group's findings and recommendations for reorganization apparently reflected the strong feeling that permeated the Army and the Office of the Secretary of Defense—the very strong dislike for the technical services and their methods of operation.

They observed that the Army Staff should get out of operations since there is an inevitable conflict between staff and command viewpoints. They stated that placing both jobs on a single officer detracts from his capability to perform either job well.

The group was also critical of personnel management, especially in the technical services. The group pointed out that the increasing complexity of weapons systems made greater flexibility necessary in the assignment of people with specialized talents. The group further indicated that under the technical service organization training was fragmented among too many agencies.

This suggests to me a major lack of consistency in the group findings. On one hand, the group indicates the need for better utilization of personnel and better training management because of the need for more technical skill, but they apparently hoped to solve this problem by making personnel generalists rather than specialists. They hoped to manage people better by centralizing management regardless of skills required, rather than continuing to have the technical services with their specialized talents manage and train technical people to perform highly technical jobs.

As the Army did away with the technical services, they did away with a great deal of waste, duplication, and outmoded procedures. But, they unknowingly lost something very important, very essential. The Army in the field lost the much needed help, aid, and assistance



☐ **Department of the Army organization after Operation Steadfast.**

of the industrial base. (DARCOM maintenance and supply technicians have been assigned worldwide to correct these problems; but they remain.)

There is no one in charge of the total system!

One of the main purposes of Project 80 was to eliminate the technical services from the Army Logistics System and to substitute instead a single centralized functional system for logistics. Personnel and training management was also centralized separately, but the reorganization failed in many respects.

Project 80 recognized the problems but rather than solving them, created larger, more damaging problems to good, sound logistics organization and management. It failed to recognize the importance of managing the producer and consumer systems as one. It created not one system worldwide but many uncoordinated and uncontrolled systems with no one in charge of the total system. It failed to recognize the difficulty of managing and training logistics specialists. A solution to personnel management is difficult. Somehow, logistics managers must be more actively involved in the management and training of logistics personnel.

That was Project 80. The next major reorganization was Operation Steadfast in 1973. It continued to centralize major functions with major Army commands *except for logistics* (see chart opposite).

The Combat Developments Command was disestablished. In its place, the Training and Doctrine Command was established to direct all Army individual training and education and the development of organization, materiel requirements, and doctrine. Thus, the combat development and training functions were combined under one command.

The Continental Army Command was also disestablished. In its place, the Forces Command was created and given responsibility for the combat readiness of all Active Army, Army National Guard, and Army Reserve Forces. The major change affecting the Army Materiel Command was organizational realinement designed to improve the Army support structure.

All medical activities in the United States were centralized under a U.S. Army Health Services Command. Strategic communications were centralized under the U.S. Army Strategic Communications Command and personnel functions were centralized under the U.S. Army Military Personnel Center.

Conspicuously absent from consideration was the major logistics problem in the Army, which had existed since Project 80. Throughout Operation Steadfast, the assumption was presumably made that centralizing logistics management was less important than centralizing concepts, doctrine, and training for the Army in the field under TRADOC.

Concepts, doctrine, and training for logistics at the organizational level, direct support level, and one general support level should be developed in direct coordination with combat developers rather than with the depot or base level logistics developers. This point must be emphasized because it's the major difference in philosophy between the "warlords" and logisticians. Simply put, the debate centers on whether to marry up the total logistics system under one command or whether to break up the logistics elements between the CONUS base and the retail system with logistics doctrine being developed separately and managed separately.

Operation Steadfast established a logistics center at Fort Lee, Virginia, to coordinate the efforts of the technical service schools in developing logistics doctrine for the Army in the field. Logistics doctrine was to be developed for the Army in the field independently from wholesale logistics doctrine being developed by the Army Materiel Command. The study recognized the importance of close coordination in the development of wholesale and retail logistics doctrine. Somehow the Deputy Chief of Staff for Logistics was supposed to coordinate this requirement. However, the DCSLOG had little or no leverage over the four-star commands, TRADOC, AMC, and theater armies.

In summary, the major problem with the Army Logistics System stems from this basic difference in philosophy between the "warlords" and the logisticians. The "warlords" believe the Army-in-the-field logistics system—organizational, direct support, and general support—should be designed, developed, and implemented by the Army-in-the-field designers with little or no coordination with the wholesale system. They believe this for two reasons: first, they apparently feel that the field logistician will better understand the combat units' problems, requirements, and their environment; second, they are fearful that if the logisticians get together they will design and operate a system for their own benefit rather than for the benefit of the combat units. The latter is a justifiable criticism of certain elements of the technical services.

How do I propose that the Army correct this organizational problem?

In my opinion the Army must put together a blue-ribbon group to study the various support systems by function, commodity, and service. After this, a total logistics system should be developed that will provide for a centrally managed operation with someone in charge—in charge by function, commodity, or service, *and someone in charge of the total system*! ALOG

Lieutenant General Jack C. Fuson, USA (Ret.), was the Deputy Chief of Staff for Logistics, Department of the Army, from September 1975 until his retirement in August 1977. He is a graduate of the University of Maryland, the Army Command and General Staff College, and the Industrial College of the Armed Forces.

How 'Interoperable' Are We?

by Major W. John Stoddart and Major Robert R. Hart

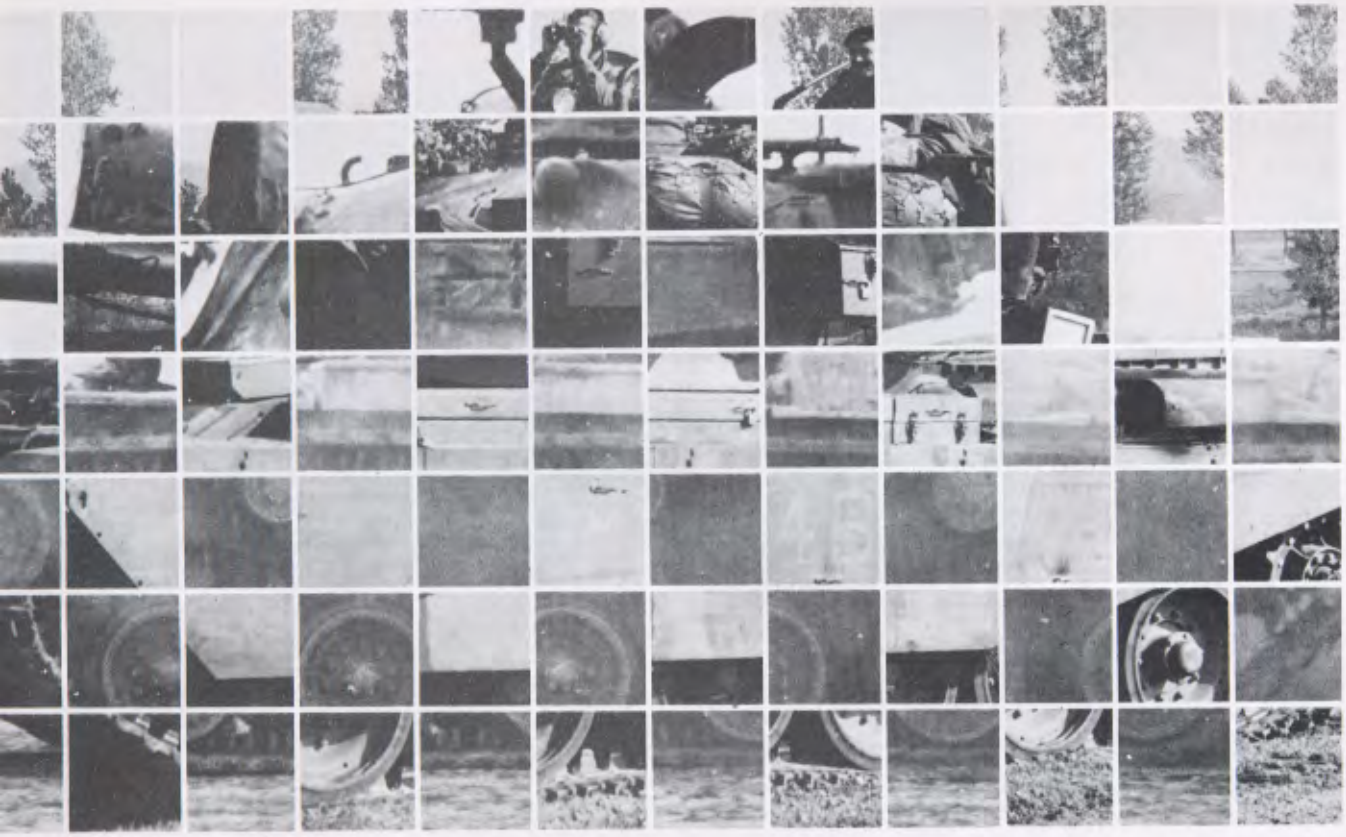
A comparison of the U.S. Army's and British Army's maintenance doctrine reveals dichotomies that could hamper mutual support.

It's 0400 hours, almost dawn, Summer 198-(?), on the inter-German border. Brigade '86 and the 1st Battalion of the Queen's Dragoon Guard are deployed forward in the sector of the British Army of the Rhine. The 8th Shock Army of the Soviet Union has attacked across the border and engaged North Atlantic Treaty Organization (NATO) forces in numerous high intensity engagements. Both sides have sustained heavy casualties, and materiel losses, especially tanks, have been high.

The outcome of the central battle may be determined by the degree to which our forces are able to recover, evacuate, repair, and return the damaged tanks to action. In short, the interoperability of U.S. Army and British Army tank maintenance doctrine becomes a critical factor. Let's see how interoperable we really are under these circumstances.

Logistics doctrine of the U.S. Army, and to some lesser degree that of the NATO armies, has been influenced significantly by the 1973 Arab-Israeli war. Great materiel losses very early in that war led the U.S. Army to conclude that techniques must be adopted, or else created, that would allow for immediate and rapid recovery, triage and onsite repair, or evacuation of battle-damaged combat systems. The essence of this emerging U.S. Army maintenance doctrine is to "fix forward."

Fix forward places maximum available manpower



and equipment, drawn from organizational, direct support, and general support maintenance, as close to the battle area as possible. Field manuals and training course materials at all levels are being rewritten to incorporate the necessity of rapid repair and return of weapon systems to combat in the shortest possible time.

For our comparison of U.S. Army and British Army doctrine we will use the U.S. M60A3 and the British Chieftain MK II main battle tanks. The methodology will be to assume battle damage and then follow each vehicle through the appropriate national repair system until its return to combat.

Our M60A3 has been hit in the right front quadrant. The tank has been severely damaged; crew members injured; and the driver killed. The right front drive mechanism (road wheel, idler wheel, and idler arm) is mostly gone. The turret won't traverse and something is wrong with the hydraulics. Switching the radio to the battalion admin net, the tank commander calls for help. The tactical radio net has monitored the action and has notified the maintenance officer of the damage incurred. At this point the battalion maintenance section initiates the recovery process. It dispatches an M88 and crew from its pool of recovery teams. These teams are composed of both organic and attached sections from direct support and general support maintenance battalions. The M88 crew arrives at the given coordinates and finds the damaged tank. After a hurried, under-fire inspection, the team agrees with the crew that evacuation is necessary. They hook up and begin dragging the vehicle to the battalion motor combat trains area.

On their arrival, a noncommissioned officer from the tank battalion and one from the supporting direct support unit thoroughly inspect the damaged tank. They decide that the damage to the driving components and the warping of the turret ring require general support level repair.

Several actions are taken as a result of this inspection. The tank crew is given a "float" M60 belonging to the direct support unit but placed forward for just such use. The tank crew commandeers a driver from another tank whose commander has been killed and heads back into action.

Basic issue items, ammunition, and unit equipment are offloaded from the damaged tank and loaded on a heavy equipment transporter for the 60-kilometer journey to the general support unit. The direct support unit is bypassed in this case based on the knowledge and damage assessment of the officer in charge of the forward contact teams. At the general support unit, the vehicle will be repaired, if possible, and returned to the supply system, as current corps support command policy dictates.

Since the float M60 has been issued, a replacement

British Army photo

☐ **The British maintenance carrier crew uses a powerpack lift on this Chieftain main battle tank.**

must be procured immediately. Once the combat-damaged tank is repaired, it will return to the supply system because there is no system available to insure its return to its original combat unit. The materiel management center has been kept advised of this entire procedure either by landline, radio, or messenger. This allows the dynamics of asset management to continue to support the battle.

What doctrine have we seen? When damage occurs, the crew repairs it or calls for a contact team from their battalion. This team may be organic or attached from direct support or general support. If the team cannot repair onsite, the damaged item is evacuated to battalion, direct, or general support maintenance. Supply and maintenance management channels up through corps are notified simultaneously insuring that damaged assets and resupply to the combat forces are managed. In other words, fix it as close to the fight as possible and return the vehicle and crew to combat as quickly as possible.

This overview generates many questions. How many trained recovery teams are available to the battalion to do battlefield triage and onsite repair of extensively damaged tanks? Are there sufficient M88 and heavy equipment transporters to support the expected maintenance load? How will the teams be controlled? What communications systems will the materiel management center and the movement control center and other management echelons use to follow battle dynamics?

The most cursory review of the current assets available to the battalion commander, both mechanical and human, would lead to the conclusion that the U.S. Army needs, as a minimum, more communications, recovery vehicles, heavy equipment transporters, and adequate quantities of trained personnel to implement battlefield maintenance doctrine.

Our scene now switches to the British Army of the Rhine sector. Tank number 1-11 of the Queen's Dragoon Guard sustains a direct hit. The crew commander crawls from the tank after the initial shock passes. As he regains full consciousness, he sees that the driver is dead and the loader and the gunner are badly shaken. He also sees that the right front road wheels and the idler wheel are destroyed. The crew unsuccessfully tries to rotate the turret both manually and electrically. The tank commander's continuing inspection finds the fire control system inoperative. He now attempts to contact his divisional light aid detachment (LAD). The LAD, comprised of more technically qualified personnel, is more capable of determining accurately the level of damage and the maintenance work required to return the tank to combat. The LAD also performs quick fixes and minor component repairs near the front.

The LAD determines that tank 1-11 has sustained damage far beyond their repair capabilities. The tank will be evacuated by the squadron's armored recovery vehicle to the equipment collection point located in the divisional support area.

At the collection point, parts may be cannibalized and subsystems switched to make one combat-ready vehicle from several inoperative ones. The combat-ready vehicle will then proceed back to the line. Because of the damage to tank 1-11, it is evacuated directly to the equipment collection point rather than to the Royal Electrical and Mechanical Engineers (REME) who control some recovery assets and determine if the item should go to the equipment collection point. If an ar-

mored vehicle is too extensively damaged to be repaired forward, then the vehicle is evacuated to the main repair group of the REME located in the division rear. This is the decision for tank 1-11.

At the divisional workshop, the battle damage is repaired and the equipment is provisioned and refitted by the Royal Army Ordnance Corps and the integral ordnance company.

In the case of tank 1-11, the Queen's Dragoon Guard augmentation crew is called upon to recrew the tank. The driver is the only person replaced from the initial crew. The three survivors go back into action with a new driver. The repaired, refitted, and replenished tank and the crew will move in a battle formation to the forward area and will be committed into the main battle when directed.

What then is the doctrinal scheme used by the British Army for maintenance and repair? The LAD operates near the divisional boundary of the main battle. Immediately behind it is the forward REME group. It has the capability to recover, repair by replacing major assemblies, and perform limited repairs on telecommunications equipment. It also provides command and control for the detachments. The forward repair group is located near the equipment collection point where components can be cannibalized from severely damaged equipment or else the equipment can be evacuated to a higher level repair facility located with a direct support REME workshop in the divisional area. There it is determined if the system is beyond local repair. If so, it is further evacuated out of the division. The workshop has the capability to perform all repairs except major rebuild.

In the British system any repair level can evacuate equipment to the REME workshop. Because of the British logistics concept of repair-on-the-spot-if-possible, the forward REME group's repair teams have the equipment to evacuate battle-damaged equipment. This capability makes the system a viable support structure. The Royal Army Ordnance Corps provides for units to draw supplies from their next higher level of support. This makes supplies readily available and every British soldier knows the procedure for getting them.

From these comparisons, one can see the national doctrinal differences. The workings of the recovery and evacuation section are a good example. The 59-ton Chieftain tank and the 56-ton M60 can each be retrieved by either country's tank retrievers and hauled by either country's transportation assets. The Chieftain recovery vehicle and the M88 are compatible in many respects and the basic recovery techniques are the same.

Compatibility is limited, however, to the main armored retrievers since the U.S. M578 will not handle a Chieftain or an M60A3. The M578 will be relegated to lighter vehicles such as the M113 and the fighting vehicle systems. Petroleum, oil, and lubricants and machinegun ammunition are compatible, but the interchange of repair parts is unfeasible. Supply concepts of the two armies do not preclude interoperability if standardized items are available and identifiable on the battlefield.

The real problems arise in the number of available recovery and transporter assets, the completely different parts for combat systems, and the communications requirements to operate and control the system. The compatibility of U.S. Army and British Army maintenance, supply, and transport units is quite good based on history, language, and culture.

By understanding both the unique and the complementary systems of different armies, interoperability procedures can be improved. The improvement can only be fully realized by continuous training and interaction among allies. The NATO standardization and rationalization group in London consistently works with United Kingdom Land Forces to determine what systems are interchangeable and what U.S. systems will substitute. This may be more easily done because of our predilection toward the British and our conversion to like units and measures. If an international system were to be adopted, interoperability would be greatly enhanced in the 1980's. More combined-nation exercises must be conducted to provide the experience and confidence allied soldiers need to work within allied systems.

The U.S. Army should seriously rethink the decisions made in the mid-1970's that place the preponderance of the combat service support units in Reserve components and strip the active logistics forces of adequate recovery, transportation, and communications assets. If the doctrine of "fix-forward" is to operate, there must be adequate resources available to the units committed to the central battle. If the scenario that introduced this article were to occur today, how do you think we would make out? ALOG

Majors W. John Stoddart and Robert R. Hart are assigned to the Office of the Project Manager, XM1 Tank, Detroit, Michigan. Both are graduates of the Army Command and General Staff College. Major Stoddart was an exchange officer with the Royal British Armour Centre in England. He holds a B.S. degree from the University of Nevada and an M.A. degree from Babson College. Major Hart has been a project officer for commercial materials-handling equipment and a materiel officer for the 8th Maintenance Battalion. He holds a B.S. degree from the University of Nebraska and an M.A. degree from the University of Arkansas.

Ammunition on the Open

by Major Wayne L. Dandridge

An Army transportation officer provides a first-person account of problems that commercial carriers experience in transporting hazardous materials.

I had always wondered if transportation officers were familiar enough with security and safety hazards of sensitive arms, ammunition, and explosives transported on the open road. The opportunity to answer the question for myself came after the Munitions Carriers' Conference held in Denver, Colorado, in 1979.

During a conversation with a carrier executive I mentioned my desire to ride a commercial ammunition truck from Sierra Army Depot, California, to the North Carolina ammunition port at Sunny Point. He thought it was a good idea and offered to let me ride in one of his company's trucks. I was able to convince the depot commander that I should make the trip. I would be on official orders, but at no expense to the Government or the company. The trip was set for September 1979.

In this account, certain names and places have been fictionalized to avoid identifying either the people involved or the carrier. On 5 September 1979, Dale Mover, a senior driver for Cross-Country Lines and Fred (Buster) Helper arrived at my office at 0800 hours. I learned that Dale is a veteran tractor owner-operator with 22 years experience and a "pro" in moving hazardous material. He is a man with a jovial personality and suffers the classic symptoms of a long-time cross-country driver—nervous stomach, hemorrhoids, and a weak back from two serious accidents (neither of which were his fault).

"Buster" is a quiet young man, large in stature, with good driving skills. He has a wife and son who are not yet accustomed to his long days away from home. He is anxious to gain Dale's experience but not his symptoms.

After a brief introduction, we picked up our shipping papers and a safety inspector drove us to the loading site. We were going to haul rocket motors, classified by the Department of Transportation (DOT) as Class B explosives. Hazardous materials are classified according to their nature and the hazard presented in transportation. Class A represents maximum hazard; Class B includes explosives that generally function by rapid combustion rather than detonation; and Class C are generally articles that contain Class A or B explosives or both as components.

We were given a thorough safety and security briefing on the firefighting and signature security services requirements for this load. The Department of Defense (DOD) uses one of the following six levels of security on sensitive shipments—

- Constant surveillance service (constantly watched).
- Signature security service (hand-to-hand signature).
- Dual-driver protective service (constantly attended).
- Signature security service and constant surveillance.
- Protective security service (for secret shipments).
- Armed guard service (highest protection).

Signature security service provides continuous responsibility for the custody of the shipment in transit. This service requires that each person responsible for the handling of the shipment from origin to destination sign a "signature and tally record."

Serial-numbered cable seal locks were placed on each of the trailer doors and we were ready to roll. Dale pulled the rig up to the last gate at Sierra and we picked up our matches, lighters, cameras, and Dale's personal shotgun. It was now 1300 hours as we pulled onto U.S. Highway 395 southbound.

Our route would be Highway 395 to Reno, Highway I-80 to Tonopah, Highway 95 to Las Vegas, Highway 93

☐ **"Buster" and I seal the load at Sierra Army Depot.**

Opinions expressed are those of the author and do not necessarily reflect the official views of the Department of the Army.

Road

to Flagstaff, and I-40 to Albuquerque and on to Midland, Oklahoma. From there it would be I-40 to Knoxville and Asheville, then I-77 to Charlotte, and finally Highways 74 and 87 to Sunny Point, North Carolina. We would cover 2,945 miles in 3 days, or 66 hours, of almost constant driving. Predesignated routes are a DOT requirement.

We hadn't driven far when I realized that loading, inspecting, and paperwork had taken us through noon without lunch. I asked Dale, "How many times do you miss lunch at a military installation?" He replied, "Almost always—you Government people are forever going off to eat and leaving us to fend for ourselves." We stopped in Nevada to get our first bite to eat.

At this stop, I realized the problem munitions truckers have in finding a good place to eat. The DOT requires vehicles carrying Class A or Class B explosives to be parked at least 300 feet from any place people congregate, and Class A and Class B explosives must be constantly attended by the driver or a qualified carrier representative. This meant "Buster" had to wait in the truck while Dale and I ate. We brought "Buster" a hamburger and were back on the road within 30 minutes.

Any carrier who wants to haul hazardous materials must start with good equipment if he expects to get past the first DOD or DOT inspection. We were driving a 1979 White Freightliner with a brand new 45-foot Hobbs trailer. The tractor was air-conditioned with a sleeper, and the driver sat on a comfortable air-ride seat. These trucks, unfortunately, are not designed for a three-person crew. Since each driver is restricted by DOT to no more than 10 consecutive hours of driving, I knew that I would do a lot of sitting so that Dale and "Buster" could rest. Being an Army pilot, that truck seat reminded me of a cross between the seat in the obsolete Army Beaver and a Brahma bull. Any part of me that touched the truck got beat to death. The one time I got in the sleeper during the first half of our trip wasn't much better.

The big rigs, according to Dale, get only 4 to 5 miles per gallon, and there was only one place to refuel between Hawthorne and Las Vegas, Nevada. It was a dilapidated truck stop, bar, and diner. We pulled up to the pumps, asked to have our tanks filled, and Dale began making his tire inspections. The DOT requires that drivers carrying hazardous materials inspect tires before leaving the terminal, every 2 hours or every 100 miles in transit, and upon returning to the terminal.

When I got out of the truck, I noticed the ground, 50 feet in all directions, around the pumps was completely saturated with fuel. Large puddles of fuel one-half inch deep stood in the immediate area around the pumps. The only correct procedure observed during this refueling operation was that the refueler wore gloves. I was told that this situation exists throughout the country.

Moriarty, New Mexico, is a safe haven, so all three of us were able to eat a meal together. The DOD defines a "safe haven" as an area specifically approved in writing by local, State, or Federal Government authorities for parking unattended vehicles that contain Class A or Class B explosives. Many people believe this DOT provision is not specific enough to insure safety because many local and State authorities do not have the hazardous material expertise to make such a decision. Military installations that meet quantity and distance requirements may also be designated as safe havens.

The question of who is legally responsible for a load of ammunition, arms, or explosives that is given safe haven at a military installation is unclear to carriers as well as to some military transportation officers. The Military Traffic Management Command states this military installation safe haven policy—

"The carrier or his representative is responsible for the safety of the freight until formal delivery of the shipment has been effected. Security in the holding area must be equal to that provided in transit as stated on the Government Bill of Lading (GBL) e.g., if Dual Driver

☐ The only correct procedure at this refueling stop was that the refueler wore gloves.

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☐ **A "safe haven" stop on the road.**

Protective Service was ordered, the shipment would have to be attended by a guard within 10 feet of the vehicle. Since the carrier is being paid to provide a protective service, the carrier is expected to furnish that service, even in the holding area."

I feel that this answer is incomplete since each installation has its own special circumstances to deal with. For example, Sierra has its truck holding-safe haven area in a high security area, and truck drivers are not allowed in this area unattended. There is also the problem of relieving drivers when they have reached their maximum DOT on-duty time. I was told that several drivers said numerous military installations would not give safe haven when they needed it. We talked in-depth about this during our 45-minute safe haven stop.

We finished dinner in Moriarty and began the last leg of our trip to the Cross-Country terminal in Midland. At 0100 hours, 8 September, after driving through the worst thunderstorm I had ever seen, we arrived. Nearly 35 hours and 1,628 miles of bouncing and fatigue were temporarily over. A good night's rest gave me the energy I needed to spend 2 long days touring the terminal.

The terminal housed the company's business offices, holding yard, maintenance facilities, and fuel depot. It is the heart of a munitions carrier's business. Computerized routing, a highly efficient vehicle maintenance program, safety meetings, modern buildings, security fencing, armed guards, and a dedicated 24-hour-a-day staff were all part of this highly competitive operation.

Ammunition trailers in the holding yard are separated from trailers containing nonhazardous freight as a quantity-distance safety measure. This precaution would likely prevent a single-trailer accident from becoming a multitrailer disaster. One thing I noticed was the lack of standardization we DOD people use in sealing sensitive shipments. Some trailers had the preferred cable seal lock on each trailer door, the method we used at Sierra. Some had a cable seal lock on the controlling door only, some used the flimsy ribbon seal with a wire twist, and a few had only a ribbon seal which provides little security.

Some of the problems brought up during my visit at the terminal had been discussed at the Denver conference. Some companies have problems getting legitimate detention bills certified and paid by DOD installations. Cross-Country has problems in making a shipment to the destination, as instructed by the consignor (shipper), only to call the consignee (destination) and be told, "We no longer need this shipment on or before the required delivery date (RDD) and will not give you permission to deliver or unload for a week or longer."

In my opinion, the RDD should be honored by the consignee or detention paid when a load cannot be accepted. Here is what MTMC says for us transportation officers to follow under such situations—

"The point in time that detention time begins for vehicles with power units depends upon whether or not there is a prearranged schedule for arrival of the vehicle for the loading or unloading (see item 500, Supplement 6 of the National Motor Freight Classification). A prearranged schedule could be one where a specific delivery time has been requested by the consignee and agreed to by the carrier, such as prelodge shipments. In a situation such as this, detention will not begin until the prearranged scheduled time. If no schedule has been arranged, then detention time begins upon actual notification by the carriers' employee to the consignor or consignee of the arrival of the vehicle for loading or unloading. Specific rules tariffs should always be consulted to insure there are no exceptions to these provisions."

Armed guard service is also a carrier problem. I was told that the Governors of 44 States have said that armed guard service is illegal without a gun permit for each County through which the truck passes. These same Governors say they will not issue such permits. Such State requirements would seem to violate the Interstate Commerce Act and obstruct interstate commerce. This problem is a concern to all munitions carriers and Department of Defense transportation officers

and, in my opinion, needs to be addressed by MTMC and the Interstate Commerce Commission. Here is MTMC's most recent answer to this question—

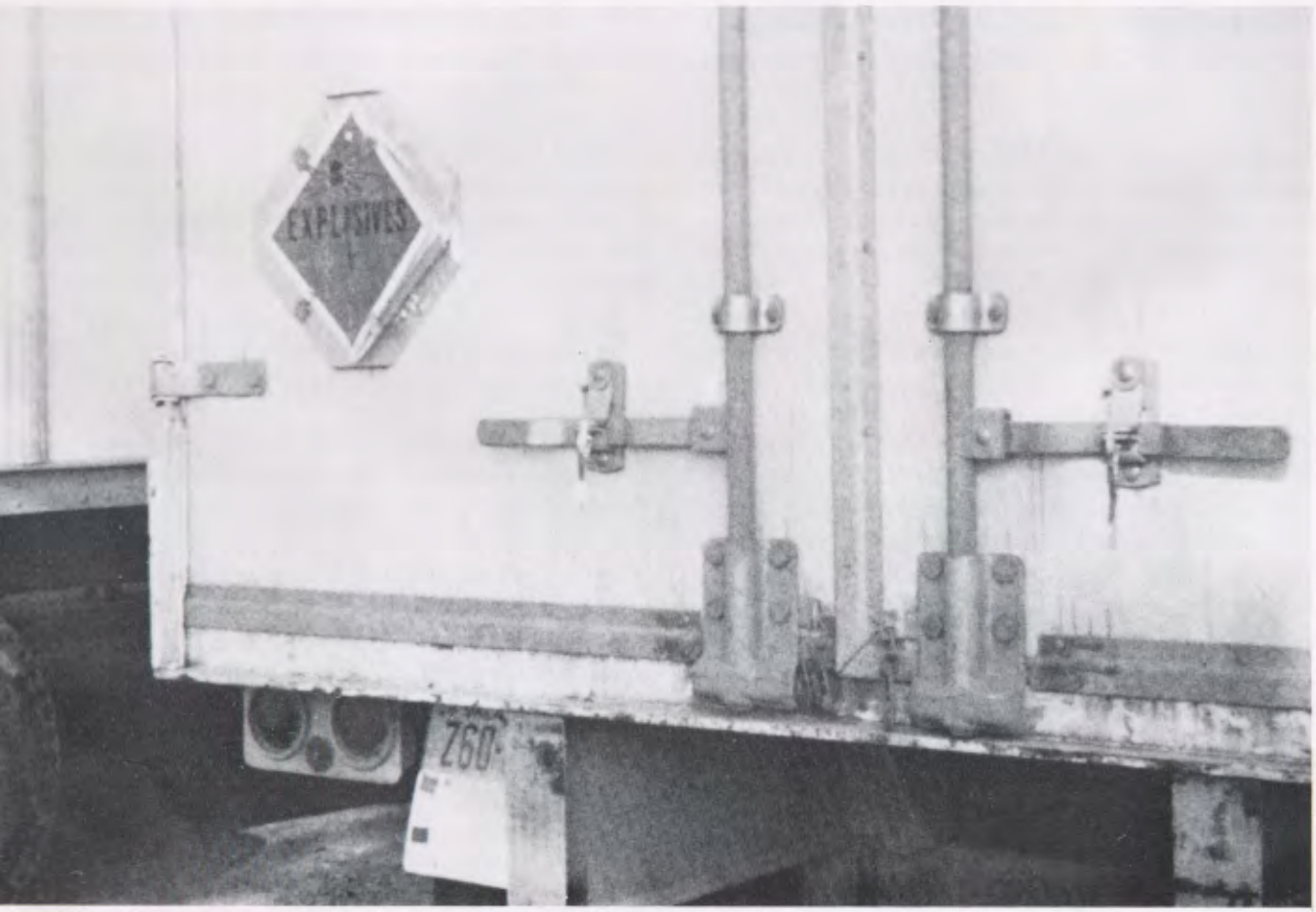
"For certain types of freight DOD requires armed guard service as a protective measure. Carriers offering this service must comply with existing national, State and local laws. Therefore, it would be incumbent upon the carrier to obtain any permits required to carry weapons. If this is a significant problem, it must be noted that it has not been brought to our attention by the carriers industry."

Carriers are not sure how DOD defines the use of "deadly force" during "armed guard service." The MTMC explains this term this way—

"Armed guard service requires constant and specific surveillance of the shipment. A guard is armed when maintaining a firearm and appropriate ammunition is readily available for immediate use. The guard must be someone other than the driver. The carrier determines the type of weapon to protect the shipment. Armed guard service is used to protect those munitions and explosives which are inherently dangerous to others, that is, property which presents a substantial potential danger of death or serious bodily harm in the hands of an unauthorized individual. In this context, deadly force may be used to prevent actual theft or sabotage to these shipments. Guards should be aware, however, that use of deadly force is justified only when all lessor means have failed or cannot reasonably be employed. The carriers should inform the guard of the above."

Many other problems, too numerous to discuss in one article, were also talked about during my 2 days at the Cross-Country terminal.

At 1700 hours, 9 September, we began the last half of our trip to Sunny Point. At our first 100-mile tire check, we noticed that the terminal maintenance crew had washed off the Class B placard on the front of the tractor. A search of the cab confirmed that we had 10 of every type of placard except Class B. We stopped at two truck stops. No one had a Class B placard. The trailer had permanent placards on all sides, but the tractor wind deflector blocked the front trailer placard from view. The DOT requires that the placard be visible from the front of the vehicle. It was not until 19 hours later at the Cross-Country terminal in Tennessee that



☐ **Two cable seals are the preferred method of sealing a sensitive shipment. The trailer shown has only two ribbon seals and can be opened without breaking the seals.**

☐ **Speed limits are not uniformly enforced.**

we got a replacement. Lucky for us the States are not yet enforcing 100 percent of the DOT regulations. It would be a good idea if all truck stops and State weigh stations sold placards.

From the terminal we began the final leg of the trip to Sunny Point. The road surfaces of the entire route we traveled were badly worn and in need of repair. The States must have their hands full keeping Interstate 40 open. Many roads require constant maintenance because of heavy truck traffic.

The States do not have standardized truck length and weight laws either. Dale said this is a major reason for the truck strike earlier in 1979. The problem of nonstandard length and weight seems to be another violation of the Interstate Commerce Act and an obstruction to interstate commerce.

By this time I had heard a large number of drivers talk about problems they face in handling hazardous materials. This is a summary of just a few—

• Many places do a miserable job of cleaning up nails, wire twists, banding material, and other tire-destroying foreign objects. Foreign object damage (FOD) is a big problem for truckers.

• Too many pickup sites either take too long to load or, if they load quickly, they take too long to complete the shipping papers. Drivers normally do not share in detention charges.

• Drivers are required to surrender guns, cameras, lighters, and other possessions without obtaining a receipt upon entering security areas.

• A shipper often orders single-driver service, yet when the trucker arrives, he finds dual-drivers required.

• Tarps, chains, and tiedowns are frequently stolen.

• The 55-mile-per-hour speed limit isn't so difficult for truckers to observe, but it is not uniformly enforced and significantly reduces driving safety. A truck must maintain from 62 to 65 miles per hour to stay with the normal flow of traffic.

At 0100 hours, 11 September, we finally reached the Military Ocean Terminal, at Sunny Point. The last half of our ride had covered approximately 1,217 miles in about 31 hours. I was totally exhausted and hoped we could drop the trailer and begin our return trip west. No such luck. We had to wait until 1000 hours to pick up an empty trailer.

We left Sunny Point at 1100 hours, picked up a load of Class A ammunition at Charleston Naval Weapons Station, South Carolina, and returned to Midland. I had planned to ride the truck all the way back to Hawthorne Army Ammunition Plant, Nevada, but I ran out of money, time, and endurance. I flew home from Midland. It didn't matter though, because I had the answer to my original question. "Transportation officers are not as familiar as they should be with the open road safety and security hazards of ammunition shipments." ALOG

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CALLING A SPADE A SPADE by Lieutenant Colonel Robert W. Hall, Jr., FLARNG

How many times have you heard or used "they" as a source of information or doctrine? Isn't it time we identify "they"?

Let me dispel one "they" associated with a concept currently in use among the Reserve components. Are you familiar with the terms "MLCH" and "LCC"? While not official acronyms such as those listed in AR 310-50, they are widely used in the Reserve components. The first term stands for "major logistics command headquarters" and is defined as "that element directly responsible for the supervision of the logistics support and the control and supervision of the field training of logistics units in the logistics support area." The LCC stands for "logistics control center" and is defined as "the centralization of the concept of utilizing combat service support (CSS) units and control headquarters to provide CSS during field exercises, including annual training."

In a nutshell, the concept is that combat service support is organized to support subordinate units, tenant units, transient units, and other activities. Identifying the supporting units as "MLCH" and "LCC" is about as accurate as using "they" to identify a source. The terms may be convenient in discussing a concept, but I believe it is more important to identify units correctly and teach personnel to use terms correctly.

If the MLCH is, in reality, a corps support command or an area support group, let's call it that. If the LCC is, in reality, a supply and service battalion, let's call it that. When Reserve component units are committed to a theater they will find no such organizational unit as a "MLCH" or a "LCC." If we teach and train today using the correct terms and organizational structures, then if mobilization should occur tomorrow, the troops will at least know where to look for support.

This idea may not be novel, but improvement in training is, after all, our most important product outside of combat or combat support. ALOG

Lieutenant Colonel Robert W. Hall, Jr., is the executive officer of the 50th Area Support Group, Jacksonville, Florida. He is a graduate of the Air Defense School and the Army Command and General Staff College.

CROSS-LEVELING IMPROVES SUPPLY PERFORMANCE by Chief Warrant Officer (W2) Glen L. Comstock

Probably the most common statement a customer hears from his supply support activity is, "Sorry, the item is out of stock and is backordered. Wait for further instructions." This kind of status report does not improve the combat capability of a unit commander who has a combat mission. He needs supply support that enables him to deploy every one of his combat vehicles in a timely manner.

The two most common problems that supply support activities face are zero balances for items on the authorized stockage list and excess stocks on hand. Cross-leveling can help solve these two problems and improve supply support.

Cross-leveling assists in upgrading materiel so that units can maintain readiness consistent with their mission. Cross-leveling can also reduce excess stocks and provide proper balances in supply support activities.

The VII Corps, in Europe, prepares a monthly national item identification number report on microfiche, using the supply support activities' monthly stock status reports. This report is distributed to all supply support activities within the corps. Supply personnel throughout the corps can visually analyze available assets. Since this report is only a snapshot view of a given account at a given time, communication among the supply support activities is vital. The savings that are realized in order-ship time and money by using this report to cross-level makes it a vital supply support tool.

When we are forced to "do more with less," the use of alternative ways to maintain a responsive authorized stockage list of items is needed. Rather than spend money outside the corps, cross-leveling of excess items from one supply support activity to another whose items are at zero balance saves the corps money that would otherwise be obligated to the wholesale supply system.

Within our supply support activity, cross-leveling has improved support to our customers. Repair parts that are causing equipment to be deadlined are screened against assets available within the corps. This has also enabled us to replenish zero balance items on our authorized stockage list.

The combat readiness of our customer units has improved and zero balances have decreased. At the same time, the strain on the wholesale supply system has decreased. I recommend the use of cross-leveling to supply support activities Army-wide. ALOG

Chief Warrant Officer (W2) Glen L. Comstock is the supply support technician, 614th Maintenance Company in Europe, supporting an armored cavalry regiment.

Computing Optimum Repair Parts Inventory Cost

by Second Lieutenant Richard L. Routh

General John R. Guthrie, commanding general of the Army Materiel Development and Readiness Command, wrote in the October 1979 "Green Book" issue of *Army* magazine of the imperative need to accurately determine cost-effective solutions for the "better utilization of available repair parts stocks." Because of increasing budget constraints in the Department of Defense, as well as the increased number and complexity of new weapon systems, it is becoming more essential than ever to get the most for our logistics money. It can be expensive to decentralize repair parts from continental United States depots to oversea battlefields. On the other hand, it can be disastrous in terms of system availabilities and fighting effectiveness to have all repair parts centralized in the continental United States or even in division supply depots. The logistics question has become, "How do we determine the most cost-effective way to decentralize repair parts?"

Using the U.S. Army Communications Command Logistics Tradeoff Model (ACCLOGTROM), that problem was solved for the Army's standard remote terminal. The ACCLOGTROM computer program can be used not only to determine the cost optimum on-site repair parts inventories but to determine cost-effective logistics and maintenance policy for other complex, worldwide systems. It can be used to objectively predict system life cycle costs in determining the true long-run, lowest bid system.

The following case study illustrates this capability. The U.S. Army Communications-Electronics Engineering Installation Agency (USACEEIA), a subcommand of the U.S. Army Communications Command (USACC), recently completed a computer modeling study of the standard remote terminal. The agency, with the assistance of the terminal's prime contractor, carried out the study to determine the cost optimum repair parts inventories for 29 different standard remote terminal sites worldwide. The terminal is a state-of-the-art, mode I, telecommunications computer that functions as a telecommunications center connected directly to either an AUTODIN switch or one of AUTODIN's nodal telecommunications center exchanges. These could be either the Army's automated multimedia exchange, the Navy's local distribution message exchange, or the Air Force's automated telecommunications processor. The standard remote terminal is a complex, modular computer with over $50,000 worth of possible repair parts. The objective of the modeling study was twofold—

- To determine for each of the 29 representative sites (9 in Korea, 8 in continental United States, and 12 in Europe) the cost optimum repair parts inventories to achieve the system availabilities specified in the contract.
- To provide an objective review and analysis of standard remote terminal logistics and maintenance policy to try and make it more cost-effective.

The ACCLOGTROM model has been under development for over a decade. It is capable of modeling a complex electronics system to determine the cost optimum repair parts inventory based on a life cycle analysis for an electronic system that meets the specified system availability. It is capable of incorporating several variables into its analysis, such as—

- Competence of maintenance personnel.
- Reaction time of maintenance personnel once notified of a malfunction.
- Cost of manpower at each echelon of maintenance.
- Location at which a line replaceable unit (LRU) is repaired.
- Line replaceable unit—shipping time and cost from both the depot and intermediate maintenance facilities.
  - —density in system.
  - —unit cost.
  - —failure rate.
  - —procurement lead time.
- Cost of test equipment needed.
- Washout rate.
- Criticality of line replaceable unit.
- Capacity of test equipment.
- Impact of inflation on costs.
- Age of system and its impact on failure rates.
- Depot and site spares protection for both line replaceable unit and piece parts.
- Transportation costs.

These variables can be modified easily by multiplicative and additive constraints to provide cost optimization based on the various inputs. By comparing and analyzing the results of these modifications, the most cost-effective maintenance and logistics policy can be deter-

EXAMPLE OF SITE DESCRIPTION CHART

Data set #	Site	Ordered Decreasing Cost Indexes	FRFAC	RTFAC	RTCON	TD	ZE
16	Europe 8	17	1	3	4	60	99%
17	Europe 9	9	1	3	10	60	99%
18	Europe 10	11	3	3	1	60	99%
19	Europe 11	3	3	3	4	60	99%
20	Europe 12	1	3	3	10	60	99%
21	Korea 1	22	3	1	1	8	90%
22	Korea 2	29	1	1	1	8	90%
23	Korea 3	15	3	3	1	8	90%
24	Korea 4	27	1	3	1	8	90%
25	Korea 5	8	3	1	4	8	90%
26	Korea 6	28	1	1	4	8	90%
27	Korea 7	5	3	3	4	8	90%
28	Korea 8	26	1	3	4	8	90%
29	Korea 9	10	3	1	1	120	99%

Legend:

FRFAC— Failure rate factor. A one (1) indicates a mature system. A three (3) indicates an infant system.

RTFAC— Replace time factor. A one (1) indicates an experienced field service representative (FSR). A three (3) indicates an inexperienced FSR.

RTCON— Replace time additive constant in hours. Used to offset replace time because of distance (in hours) the FSR lives from the site.

TD— Time of delivery (in hours) of a needed line replaceable unit (LRU) from the depot to the site.

ZE— Depot spare parts protection. The probability that a spare part will be in the depot when ordered by an FSR.

Ordered decreasing cost indexes—1 for the most expensive, and 29 for the least expensive.

mined. Mathematically, the ACCLOGTROM program uses conventional reliability and availability theory. The equations have been expanded, however, in order to incorporate the many variables, some of which are listed above. These expansions provide the sophistication necessary to model all significant variables. For more information on the specifics of the mathematics please contact the author at AUTOVON 879-6262 or write—Commander, U.S. Army Communications-Electronics Installation Agency, ATTN: CCC-TAD-PTS-ET/2LT Routh, Fort Huachuca, AZ 85613.

To provide enough information to make informed recommendations for improving the standard remote terminal logistics and maintenance policy, it was necessary to construct 29 hypothetical terminal sites on the three continents where terminals actually exist. Each site differed incrementally in its input parameters in order to provide a useful and controlled spectrum of results. The five input parameters that were thought to be of major interest were—

• **Age of the system.** An infant system tends to experience approximately three times greater failure

rate than does a mature system.

• **Competence of maintenance personnel.** It was estimated that an experienced maintenance man is about three times faster than a newly trained maintenance man.

• **Distance maintenance people live from site.** An actual survey of field service representatives indicates that they live anywhere from a few minutes to over 10 hours from the site that they are responsible for maintaining.

• **Time of line replaceable unit delivery from depot.** The average shipping time from the depot can be from 36 to 120 hours, depending on the site locations. A local depot facility was simulated for Korea by entering a value of 8 hours for time from depot.

• **Depot spares protection.** The probability that a line replaceable unit was available at the depot was varied in order to provide information on the necessity of having a large stockpile of spares at the depot. The chart on page 17 summarizes the input parameters for each of the hypothetical sites. For brevity, only 14 of the 29 sites are displayed.

One computer run was done in which depot repair time was varied in order to determine the impact of a low budget depot repair facility.

The standard remote terminal central processor—the line control unit—and the nine most commonly ordered peripherals were modeled using ACCLOGTROM. The cost optimum repair parts lists for each line control unit and peripheral equipment for each of the 29 sites were generated. The costs of the repair parts inventories are summarized in the chart, above right. In the last column of the chart, the cost indexes are ordered. The lowest numbers in this column represent the least desirable site configurations due to cost considerations (the necessarily expensive onsite repair parts inventories). This column also appears in the first chart to facilitate analysis.

An examination of the charts will identify input parameters that necessitate very expensive onsite inventories. As these undesirable parameters are identified, recommendations can be made for improving the cost effectiveness of the standard remote terminal logistics and maintenance policy. It is evident that it is undesirable to combine a new terminal with either newly trained maintenance personnel or with maintenance personnel who live 4 or more hours from the site.

By comparing the first eight sites in Korea, which model a local depot, with the last site in Korea, which uses the continental United States depot for primary resupply, it can be seen that a local depot in Korea is highly advisable. Excluding the Korea 7 site and the Korea 5 site, which cannot be maintained above the contractual system availability, the average cost savings per site is approximately $30,000.

The only difference in input parameters between the Europe 8 site and the Korea 8 site is that the Korea 8 site models a local depot and the Europe 8 site used the continental United States depot. By using this means of comparison, it can be calculated that a local depot in Europe will save more than an average of $10,000 per site. Therefore, it is recommended that a depot be put in Europe also.

When the depot repair times were changed from 8 hours to 32 hours for a separate run for the MART-line control unit at all 29 sites, the maximum effect was a decrease in system availability of less than three one-hundredths of 1 percent. This was for a depot spares protection of 99 percent. The conclusion from this result is to spend no more money on a depot repair facility than is necessary to keep up with repairs over a long period.

Now that some of the strengths of this method of analysis have been illustrated, let's talk about its weaknesses. First of all, the accuracy of the results depends on the accuracy of the inputs. Accurate failure rate statistics for each line replaceable unit is necessary for the success of this method of analysis. There needs to be some means of acquiring this data. Usually, Military Handbook 217 or the manufacturer can provide help here. The second weakness of the model is that it calculates results based on averages. It does not use a Monte Carlo simulation technique. This precludes discovering what percentage of the actual systems will fall outside an acceptable margin around the average.

The ACCLOGTROM computer program and this method of analysis are useful for more than just the cost optimization of a maintenance policy and the repair parts inventories.

Data Set #	Site	MART Line Control Unit	MATE Line Control Unit
16	Europe 8	5,161	7,912
17	Europe 9	8,191	94%
18	Europe 10	13,971	20,810
19	Europe 11	94%	91%
20	Europe 12	90%	85%
21	Korea 1	2,542	4,351
22	Korea 2	0	700
23	Korea 3	5,204	16,220
24	Korea 4	0	700
25	Korea 5	7,588	94%
26	Korea 6	0	700
27	Korea 7	94%	92%
28	Korea 8	700	700
29	Korea 9	15,515	18,748

EXAMPLE OF TOTAL SITE INVENTORIES COST CHART

Medium Speed Line Printer	Magnetic Tape Unit 7-Track	Magnetic Tape Unit 9-Track	Card Reader	Card Punch	Disc Drive	Optical Scan Unit	Paper Tape Reader	Paper Tape Punch	MART Total Cost Index	MATE Total Cost Index	Ordered Decreasing Cost Indexes
0	0	0	0	0	0	0	0	0	5,161	7,912	17
0	0	0	0	0	0	0	0	0	8,191	∞	9
0	0	0	0	3,823	602	2,642	0	0	21,038	27,877	11
0	0	0	0	4,422	679	3,699	0	0	∞	∞	3
0	381	381	0	6,122	1,287	4,296	0	0	∞	∞	1
0	0	0	0	0	0	0	0	0	2,542	4,351	22
0	0	0	0	0	0	0	0	0	0	700	29
0	0	0	0	0	0	0	0	0	5,204	16,220	15
0	0	0	0	0	0	0	0	0	0	700	27
0	0	0	0	0	0	0	0	0	7,588	∞	8
0	0	0	0	0	0	0	0	0	0	700	28
0	0	0	0	0	0	0	0	0	∞	∞	5
0	0	0	0	0	0	0	0	0	700	700	26
,059	1,288	1,433	519	7,599	1,608	5,011	0	0	34,032	37,265	10

*** In each box is the cost in dollars of the onsite spares which are necessary to achieve the contractural system availability of that particular peripheral at that particular site. The circled percent values indicate those peripherals or line control units (LCU) for a particular site which cannot achieve the contractual system availabilities regardless of how much money is spent on spare parts for that site. The percent values indicate the highest availability that can be achieved for an infinite expenditure of money for spare parts. The infinity signs (∞) in the totals column indicate those sites which cannot meet the contractual system availabilities for one or more peripherals or LCU at that site. Totals are not of realistically configured sites because they are one LCU and one of each of the other peripherals. They do provide cost indexes which can be readily compared site to site in order to get a general indication of relative spare parts inventory costs for each of the different sites.**

Legend: MART—Modular AUTODIN remote terminal.
MATE—Modular AUTODIN terminal equipment.
Ordered decreasing cost indexes—1 for the most expensive, and 29 for the least expensive.

It is a tool that could be very useful in analyzing different systems before procurement and even during research and development stages. Even a brief analysis of this kind might be extremely useful in providing an objective analysis of life-cycle maintenance and logistics costs that, in some cases, might change the Army's perception of who is the true lowest bidder.

The model can be used in the research and development stage of system development to optimize maintenance and logistics life cycle costs. In this way the most cost/optimum system over the entire life of a system would be developed instead of just for the deceptive initial procurement. ALOG

Second Lieutenant Richard L. Routh graduated from the United States Military Academy at West Point, New York. He has served as an automated data processing officer in the Telecommunications Automation Directorate, U.S. Army Communications-Electronics Engineering Installation Agency, Fort Huachuca, Arizona.

Standardizing Tactical Shelters

by Jack Siegel and Grayson G. Morrissett

Many of the activities of the modern battlefield, such as certain computer operations, require controlled environments that are insulated from the dust and dirt of battle as well as from the elements. A number of these systems are housed in special-purpose shelters, vans, and trailers that are costly and difficult to support.

The U.S. Army Natick Research and Development Command (NARADCOM), Natick, Massachusetts, is developing a family of standard rigid-wall tactical shelters that meet the shelter requirements of our tactical forces and are easier and less costly to repair and maintain.

These shelters are designed to replace most of the large number of special-purpose, nonstandard shelters currently in the Army inventory, as well as provide a general-purpose field shelter capability that was previously unavailable.

The NARADCOM began the development program in the mid-1970's in response to a required operational capability (ROC) document submitted to NARADCOM by the U.S. Army Logistics Center, Fort Lee, Virginia. The ROC was an outgrowth of an earlier study of Army shelter requirements.

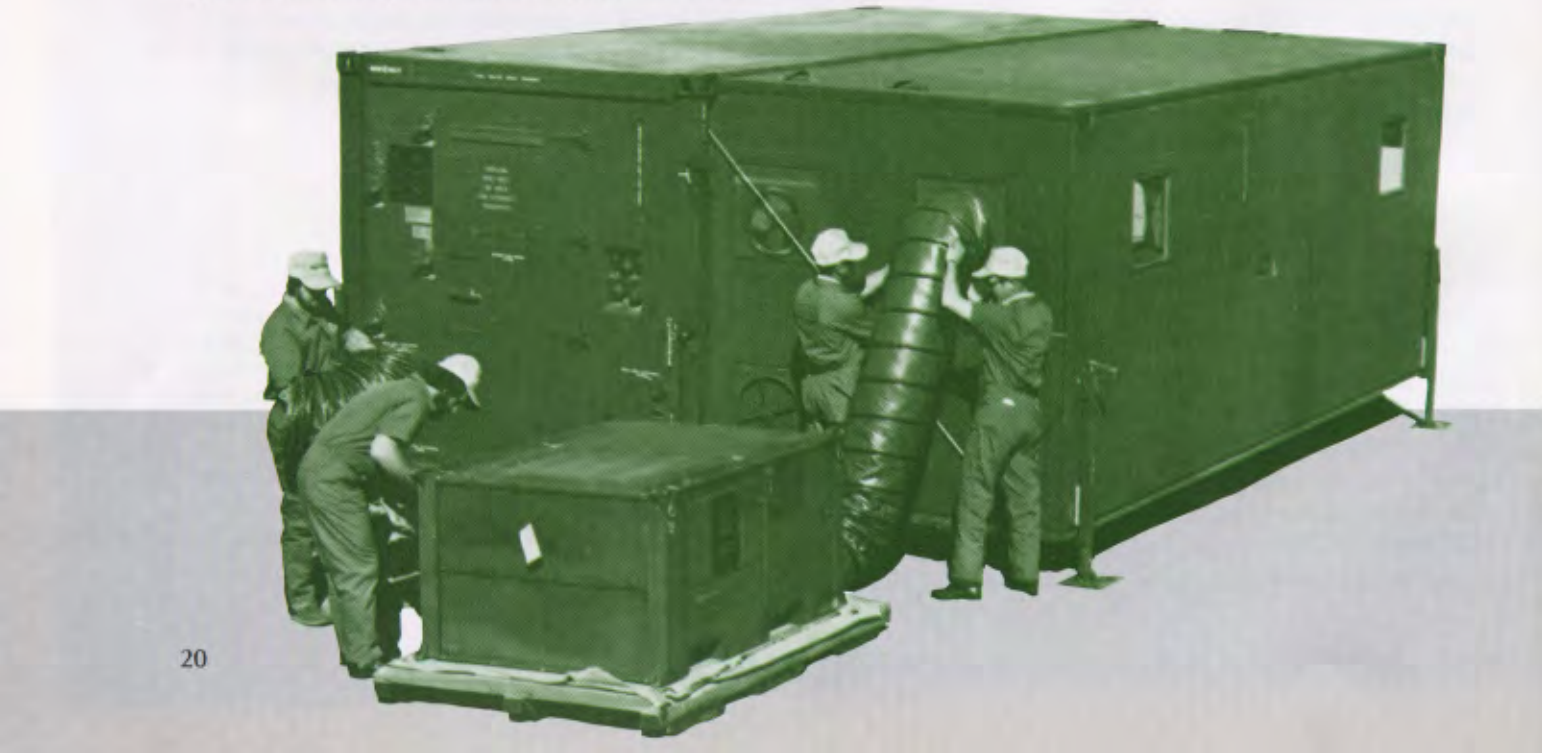
The family of standard rigid-wall shelters consists of four models. They are a nonexpandable 8- by 8- by 20-foot model, a one-side expandable model that opens to approximately twice its closed size, a two-side expandable model that opens to approximately three times its closed size, and a model that opens to 8- by 20- by 50-foot dimensions.

Each member of the shelter family conforms to the container standards of the American National Standards Institute and the International Organization for Standardization (ISO). This means the shelters are compatible with the Army's materials-handling equipment and can be shipped by all modes of transportation including cargo containerships.

The shelters are general purpose and, with minor modifications, can house a field kitchen, maintenance shop, diagnostic test center, field operating room, computer system, or other such operation. Because the shelters meet ISO standards, any equipment that will fit in an 8- by 8- by 20-foot container can be installed in a shelter at one location and shipped to its destination ready for operation.

Each shelter has a built-in system for distributing electricity and a hookup for external environmental control units. Each is equipped with leveling jacks and

Technicians attach an environmental control unit to a one-side expandable shelter, the prototype of the family of standard rigid wall shelters.



all of the hardware necessary for erecting and striking in the field. No special ground preparation is required to erect the shelters. Each has internal fluorescent lights, exhaust fans, and external area lights that can be set up with no special tools. The shelters are also designed for use with the 10,500-pound capacity M832 dolly set. Use of the dolly set allows the shelters to be towed by trucks or other ground transportation. In addition, a new 15,000-pound capacity dolly set is being developed that will allow the shelters to be towed with more equipment inside.

Engineering development of the one-side expandable shelter began in 1977. The one-side expandable model is the prototype for the entire family of shelters so design factors common to all were developed during this effort. These design factors include standardization of components, maintainability, and the adaptability of the shelters to various uses.

The fixed roof, fixed floor, and fixed end wall panels of the one-side expandable shelter are standard to all models. Replacement of these common panels can be done at direct support or general support maintenance levels where spare panels will be stored.

The adaptability of the shelters is of critical importance. The panels are made of a nonmetallic honey-combed core with an aluminum skin that is strong enough that users may mount hardware anywhere on them. In the event a piece of equipment becomes obsolete or a particular function is no longer required in the field, the shelter can be recycled for an entirely different use.

The windows, fans, and environmental control unit panels all fit the same size opening. These openings are made after the shelters are built. This allows the user to place openings wherever they are needed. All openings can be sealed as desired with standard-sized blank panels.

The procedure for erecting the one-side and two-side expandable shelters is similar. First, the fixed section of the shelter is leveled. Then the expandable section containing the floor and folding sidewall is lowered. A built-in spring-balancing system enables one or two persons to raise or lower this section. After the folding sidewall is rotated 90 degrees, the roof section is raised and the remaining walls are moved into position. To complete the setup, all of the folding panels are latched together from the interior of the shelter. With the two-side expandable unit, the procedure is repeated for the opposite side. The setup procedure is reversed to strike the shelter. The two-side expandable shelter can be erected by four persons in 30 minutes.

Much of the design effort on the family of standard rigid wall shelters was concentrated on past shelter problems areas such as seals, light fixtures, door mechanisms, jacks, and various latches. Considerable emphasis was placed on the stowage of hardware in the shipping configuration of the shelters.

The one-side expandable shelter has recently been type-classified and the first production is scheduled to begin during this fiscal year. Procurement of a limited number of one-side and two-side expandable shelters is already underway for the surgeons general of the Air Force and the Navy for evaluation as field hospitals.

By permitting the purchase of large quantities of a few types of shelters, the family of standard rigid-wall shelters offers the Army an economic alternative to buying small quantities of many types of shelters. It also standardizes shelter components such as panels and hardware and simplifies maintenance and support requirements. The family of standard rigid-wall shelters is compatible with containerships and the ISO components of military and commercial transportation systems and will provide our forces with the tactical shelter capability they require to accomplish their missions. ALOG

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A field surgery unit is set up in this two-side expandable shelter.

Unit Logistics Effectiveness

by Major Robert D. Shadley

READINESS	SIGINT/EW READINESS
°M60A1 Tank ES	°AN/GLQ-3 ES
°M60A2 Tank ES	°AN/MLQ-24 ES
°M551 ARV ES	°AN/TLQ-17 ES

☐ Functions managed.

FUNCTION	AREA TO BE MANAGED / MONTH AND UNIT	OCTOBER			
		Unit A	Unit B	Unit C	
READINESS	M60A1 Tank ES		●		
	M60A2 Tank ES				
	M551 ARV ES	●			
	M113 APC ES		●	●	
	M109 Howitzer ES				
	M103 Vulcan ES	●			
	M48 Chaparral ES				

☐ Unit-function performance chart.

The first step in military planning is mission analysis. What is the objective or goal? What are the specified and implied tasks? In his book "Management by Objectives," George S. Odiorna states—

. . . the system of management by objectives can be described as a process whereby the superior and subordinate managers of an organization identify its common goals, define each individual's major areas of responsibility in terms of results expected of him, and use these measures as guides for operating the unit and assessing the contributions of each of the members.

The Fort Hood and III Corps installation management system focuses on defining the functions and subfunctions of the installation, identifying areas to be managed within each function or subfunction, and establishing standards for each of the areas managed. The standards can be considered goals or objectives. The management system is not management by objective (MBO) in the pure sense of the definition of MBO; however, it does provide the framework for MBO.

The performance of units or organizations is managed at specified levels of decision-making authority and at designated intervals of time. The logistics functions, with a few exceptions such as bulk petroleum, are managed by the III Corps assistant chief of staff, G4. Selected management areas are briefed to the III Corps commander on a monthly or quarterly basis.

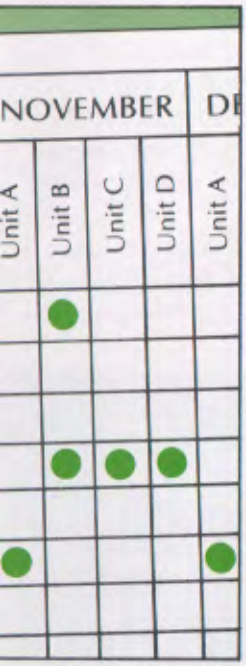
To facilitate analysis of performance, the III Corps G4 maintains trend charts on each unit or organization for each area managed. In addition, a chart was developed to portray all logistics management areas in a single graphic display. This assisted in analyzing the overall performance of the major subordinate commands with regard to consistency in meeting the standards of each management area. The top chart shows the seven logistics functions managed.

Performance of each unit is charted (lower left) and subsequently analyzed. A colored dot is placed in the applicable block when a unit fails to attain the standard for the reporting period and the block is left blank when the standard is met. This permits the manager to see at a glance where problems exist. It identifies the problem by unit, function, subfunction, area managed, or a combination of any or all of these elements.

A simple computational method that can be used is to assign a value of one to each block that is within standard and a value of zero to each out-of-standard block. Then, for a selected timeframe, for example, 6 months, compute an achieved score by adding the ones for each unit for each function or subfunction and compute a possible score by summing the number of applicable blocks. By dividing the possible score into the achieved score, a percentage or factor can be obtained. This factor can then be compared to the established standard. An example of this approach is shown in the chart at the lower right. Of course, an overall logistics consistency factor can be obtained by adding all achieved points and dividing by all possible points for all managed areas.

The computational method can involve weighting certain areas more than others, using a moving timeframe. Any technique that results in numerical scores

SUPPLY	MAINTENANCE	AMMUNITION SURVEILLANCE	PROPERTY ACCOUNTABILITY	OTHER
gh priority quests gh priority quisitions	°Military manhour utilization °Backlog °Turnaround time	°Receipt inspections °Storage inspections °Range	°Gross ASL adjustments °Net ASL adjustments °Reports of survey	°Delinquent lateral transfers °Heavy equipment movements °On-post reports



Organization: Unit A

Subfunction analyzed: SUPPLY — **Period: APRIL-SEPTEMBER 1979**

AREA MANAGED	MONTH						Achieved points	Possible points
	Apr	May	Jun	Jul	Aug	Sep		
High priority requests	N/A	0	1	0	0	0	1	5
High priority requisitions	1	1	1	0	0	0	3	6
Class V serv. turn-in	1	1	1	1	1	1	6	6
TOTALS	9	8	9	8	7	6	47	76

Notes: 1. Identification is not an area managed for this unit.
2. N/A indicates data not available.
3. 1 = Achieved standard; 0 = Missed standard.
4. Established consistency standard is 83% (5 out of 6).

Computation of consistency factors: $\text{Factor} = \frac{\text{Achieved points}}{\text{Possible points}} = \frac{47}{76} = 62\%$

☐ **Unit-function analysis chart.**

will encounter a high degree of resistance because of the inevitable comparisons among units and because it can also be construed as rank-ordering of commanders for efficiency report purposes. Great care must be exercised with numerical scores to insure that all command levels understand the meaning of such numbers and know how to use them. It is recommended that a simple pictorial technique be used to aid in the analysis of units' progress in terms of consistently meeting standards.

Why is it important to analyze consistency? As previously noted, trend charts and individual data points for individual logistics management areas and individual units are useful management tools. However, consistency in attaining acceptable levels of performance in all areas is the ultimate objective. By examining a unit's consistency in total or in a specific functional area, problem areas can be more easily identified and confounding factors at least considered if not measured. Managers and leaders can focus their attention on problem areas so identified and, therefore, make better use of the limited time available to them. Chronic problem areas can be made items of special interest for inspections, assistance team visits, and readiness reporting.

A simplified version of the techniques discussed in the preceding paragraphs can be used by divisions, brigades, battalions, and support commands to assess the command's logistics operations. This technique can also be applied to other functions such as personnel management, operations and training, financial management, energy conservation, services, and base operations.

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War Reserves Stored in Luxe

Army equipment for theater war reserve stocks in Europe is now being stored in Luxembourg for the first time. This multimillion dollar program is designed to improve the sustainability of North Atlantic Treaty Organization (NATO) forces. Consistent with allied goals to disperse war reserve materiel, the United States and Luxembourg have demonstrated NATO's potential to improve the defense posture of Europe.

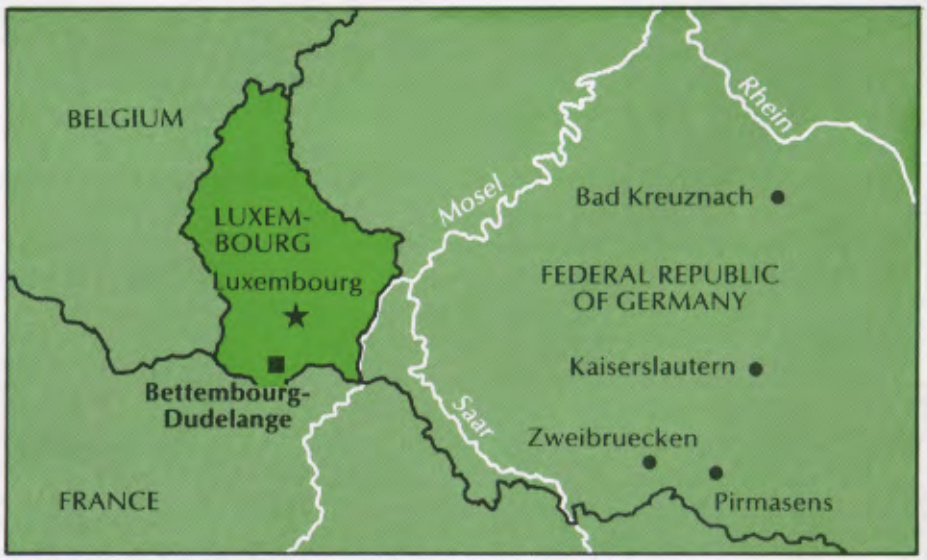
The program got underway in December 1978 with the landmark agreement between the United States and Luxembourg. In February 1979, U.S. Army, Europe, contracted with Luxembourg's Warehouses Service Agency to construct the storage facilities and to provide storage services.

Cooperation from the Government of Luxembourg and a special loan granted to the Warehouses Service Agency from the Luxembourg federal workers retirement fund allowed construction to begin in April 1979. Just 5 months later, four warehouses were ready for use. The first vehicle—an M60A1 tank—was moved into storage at the Bettembourg-Dudelange site on 5 September 1979. A second facility is programed for completion southwest of Luxembourg City by mid-1982.

Over 89,000 tons of Army reserve stocks—nearly 7,000 vehicles, including 600 tanks—will be stored at the sites. Conventional small arms, repair parts, clothing, and rations will be included among the stored items. No ammunition, barrier materials, or bulk petroleum will be stored.

Items for storage will be sent by U.S. Army, Europe, to Luxembourg on a phased schedule as construction of facilities is completed. Eventually, 36 controlled-humid-

Bettembourg-Dudelange storage site is shown in the early days of construction, with major highway construction in the background.



Location of Bettembourg-Dudelange storage site.

mbourg

by Mark Swearengen

ity warehouses, at a cost of over 2 billion Luxembourg francs ($68.9 million), will be constructed by the Warehouses Service Agency. The agency is responsible for storing, maintaining, and securing the stocks. Controlled-humidity warehouses reduce materiel deterioration and increase materiel readiness.

Each warehouse will provide approximately 5,000 square meters of storage area, built to specifications for NATO warehouses. The two storage sites will cover an area of about 40 football fields.

Site locations are excellent for movement. Both are near Luxembourg's largest rail center and a major highway is under construction nearby. They are also close to the Mosel River and a major inland port.

Under the contract, the Warehouses Service Agency will employ civilians to provide depot-level storage operations and services at the sites. These technicians have received special training in these tasks from the 7th Army Training Command and activities of the 21st Support Command.

For the first time a U.S. Army, Europe, reserve storage facility will be operated completely under contract. The 29th Area Support Group, an activity of the 21st Support Command, is the Army's manager for the project. A liaison team headed by a U.S. official will supervise execution of the contract. ALOG

Mark Swearengen is a public information officer for the 21st Support Command in Germany. He holds a bachelor's degree in business administration from the University of Missouri. He is a major in the U.S. Army Reserve and teaches in the 3747th USAR School in Germany.

Warehouses Service Agency, Luxembourg, photo

An M60 tank is delivered for storage in one of the eventual 36 controlled-humidity warehouses (left). The storage site is accessible by highway, water, and rail (above). These tanks (below) are part of a planned 600 to be stored along with other vehicles and supplies.

Container Use in the Warsaw Pact Armies

by Karen J. P. Binney

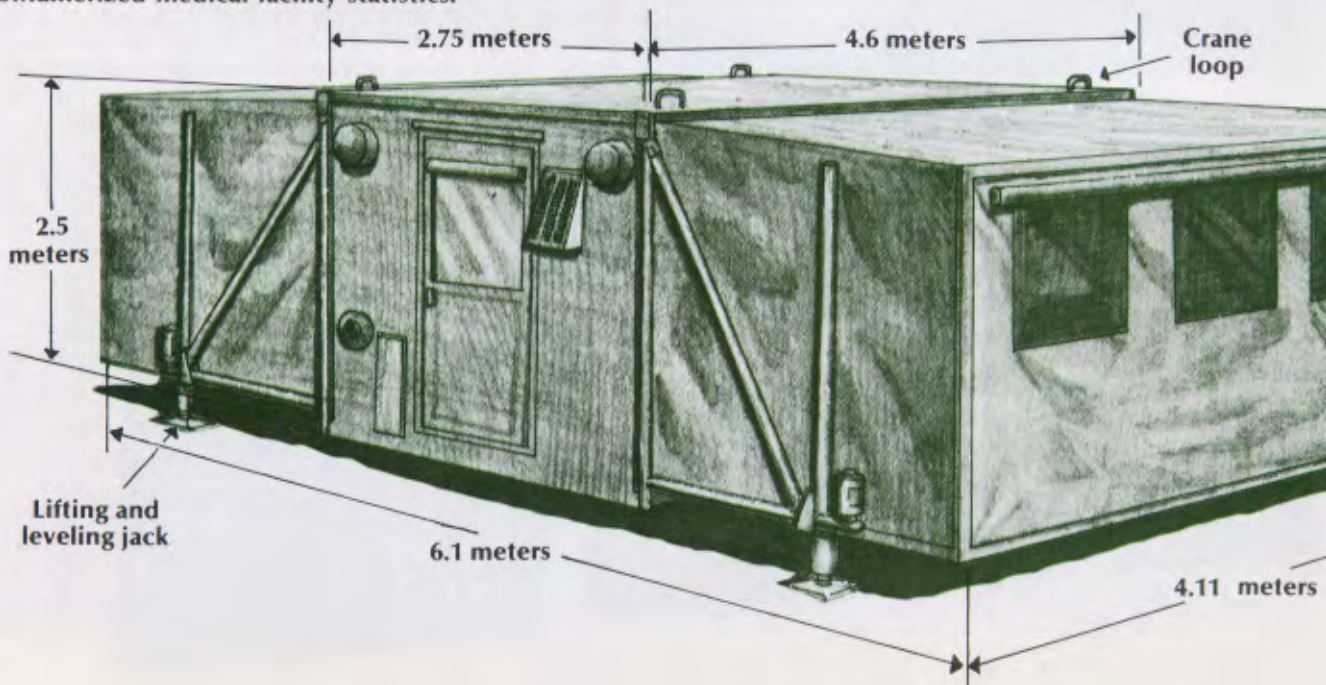
Mobility—this is the key to the advancing army. The logistics systems of the Warsaw Pact armies are designed not only to supply but to do so rapidly to sustain the momentum of attack. Therefore, vehicles and equipment involved in the logistics support of a unit must also have good mobility. The introduction of the 20-foot International Standards Organization (ISO) 1C container (and other large containers) helps to increase the mobility of such rear service organizations.

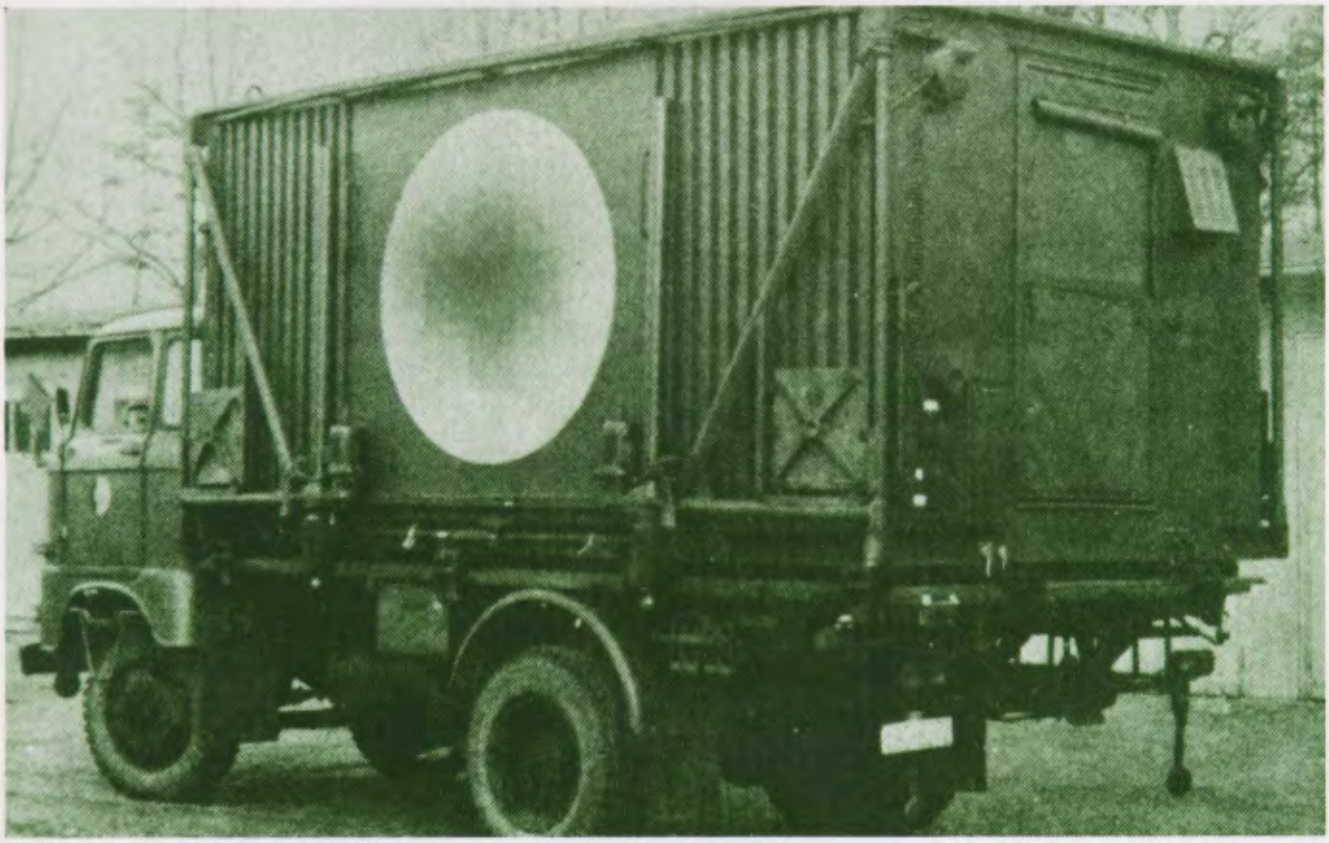
The military use of containers depends to a large degree on the status of the civilian container transport system. The more viable the civilian system, the greater the use of containers by the country's military. This is especially true in the Communist countries, where only four armies—East Germany, the Union of Soviet Socialist Republics (U.S.S.R.), Czechoslovakia, and Poland—are known to use containers. The civilian container transport system in each of the other Communist countries has not been sufficiently developed to support a military container transport system adequately and such development is at least 5 years away.

An additional reason why the armed forces in the Communist countries have not fully used containers is that, with the exception of a few Soviet military vehicles, very few of the purely military trucks are capable of handling a fully loaded 20-tonne container. Either the weight of the container is too great, or the truck's cargo bed or trailer is too short to accommodate a container of this size. In those countries where the military uses containers, this handicap has been overcome either by modifying the military trucks or by using the large variety of commercial models capable of transporting containers. The latter is the more likely because containers would probably not be used forward of the division rear supply areas during combat. The low-mobility commercial trucks have little difficulty operating in this area.

The Communist armies that use commercial and military containers do so in a variety of ways. The commercial containers are used primarily for the transport and storage of most general supplies (such as food, clothing, and repair parts) and of household goods for troops changing stations. It is possible that purely military items (ammunition, weapons, and spare parts) are transported in the commercial containers, but such items are more likely to be transported in military con-

☐ **Containerized medical facility statistics.**

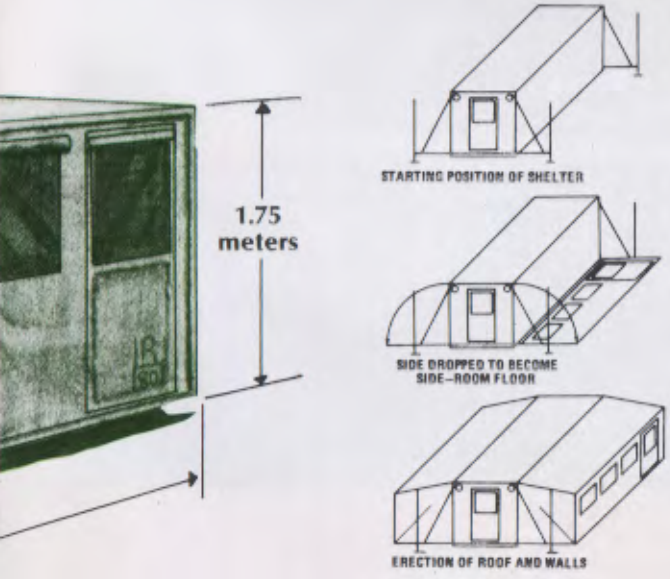




□ **Medical service container of the East German Army.**

tainers. The greatest use made of the containers by the Communist military forces has been as shelters and workshops and for housing various equipment systems.

Among the Communist countries, East Germany uses the containers in the greatest variety of special-purpose military applications. Most of these applications are unique to East Germany within the Warsaw Pact countries, but some may well be available to the other member armies through the Warsaw Pact inventory.



Insulated ISO 1C containers are used to house the East German Army water-filtration system, WFS 3/72. It consists of two closed compartments. The instrument compartment, located at one end and accessible by two doors, contains the complete water-filtration plant, including accessories. The machine compartment, accessible by two doors at the other end of the container, houses the diesel electric plant with a complete electroengineering installation.

In 1975, the East Germans developed a transportable filling-station container that can be set up rapidly almost anywhere as a mobile field depot for refueling vehicles and other fuel-consuming equipment. It has been in use by the East German Army ever since. The filling-station container (page 29) consists of the following components: ISO 1C container; support frame; 10,000-liter horizontal cylindrical tank; filling station type of pump and electrical system; hose connections; desk; curtain; and pole-mounted lighting fixture.

Apart from its function as a standardized transport container, the container protects the station from the weather and provides a sheltered work area for the station attendant.

The medical service of the East German Army has developed, tested, and adopted for use a universal,

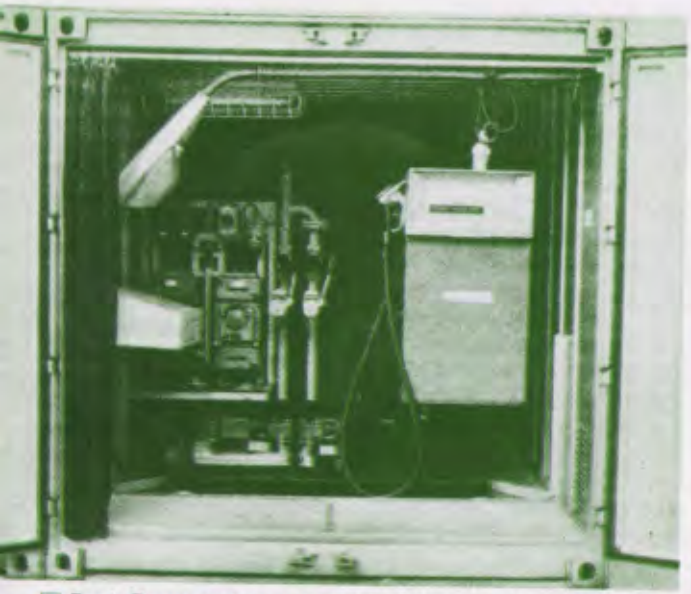
transportable, expandable container (page 27). It is a specialized container that does not conform to ISO standards. Instead of having the ISO corner fittings, it is equipped with four crane loops on the roof near the corners. In addition, it has four integral jacks on the corners. Each jack can be set at different heights to guarantee that the container will be level on uneven terrain.

The container can be lifted and loaded onto the truck platform in 6 minutes by means of this jack system. Expansion of the container requires two or three men and takes about 20 to 30 minutes. The sidewalls fold down, thereby becoming the floors of the side rooms. The roof and walls of the side compartments are made of plastic-coated canvas, into which windows and doors are built. This container is used to house at least four different medical facilities: a pharmaceutical field laboratory; a surgical facility; a field epidemiology laboratory; and a mobile blood station.

In the East German Army, the medical facilities are deployed at both tactical and operational levels. The use of expandable containers for mobile medical facilities permits high-quality, sanitary medical operations in the field and under combat conditions. This type of facility has several advantages over tents or other temporary accommodations: It increases the mobility and maneuverability of medical units and facilities; the facility is ready for operation more quickly; and it provides more space and better working conditions.

The East German Navy has a mobile electronics workshop mounted in a modified ISO 1C container for use both on land and at sea. The container is equipped with corner fittings and hydraulic jacks to permit it to be unloaded from its trailer at any location, even if no other handling equipment is available. The container

□ **Czechoslovakian 5-S military container.**



☐ **East German transportable filling station container.**

can be hermetically sealed and has a filter ventilation system. Both features indicate that this workshop provides protection against chemical, biological, and radiological contamination.

The Soviet Armed Forces have a long history of using containers for the transport of supplies; this includes their extensive employment during World War II. The basic containers used by the Soviet Armed Forces have capacities of 1.25, 2.5, or 5 tonnes.

The 20-tonne ISO 1C has been used for the military only since about 1975. Its use still appears to be quite limited. The ISO 1C unit will probably not play a major role in military logistics until after the civilian container transport system is nearly complete. The Soviet Armed Forces, however, are extremely interested in the civilian system, because it will ultimately be available to them.

Many types of military items are currently being shipped by containers, primarily the small- and medium-sized items. These include clothing and medical supplies, military trade goods, communications equipment, food, aviation freight, and, without a doubt, ammunition and small weapon systems. One unique use of a special container flat by the Soviet Armed Forces is to transport a trailer-mounted field kitchen. There are at least two viable reasons for placing a field kitchen on a container: The trailer may be inoperative and require maintenance or the kitchen may be receiving preparation for airdrop.

During a war, the Czechoslovakian Armed Forces will depend heavily upon containers used in the civilian sector of the economy. For the transportation of military materiel, they will use special containers developed by the military. These must meet higher standards than the containers employed by the civilian sector during peacetime. Certain types of military materiel must be securely fastened, and individual parts must be put into drawers according to anticipated needs. The containers must be stuffed so that a specific unit, or its parts, can be removed without having to unload the entire container. Container handling must be simpler and quicker under field conditions than in a normal civilian situation. The military's 5-S container (page 28) reportedly meets these higher standards. The approximate dimensions of the 5-S container are 2.6 × 2.0 × 1.82 meters.

It consists of a platform with a load-bearing frame and laminated walls. The load-bearing frame has many shelves, drawers, and boxes of the required size. The container can be handled manually with built-in jacks, by cranes that lift the containers by means of balance beam, or by forklift trucks.

As early as 1972, the Polish Army expressed an interest in containerization. Various articles in military journals discuss civilian progress in this area. They note that the civilian container transport system is compatible with defense needs and call for the increased mechanization of transshipping operations in the Polish Army with more emphasis on the use of containers. Containerized shipments of military supplies have begun, although in a very limited way.

The military use of standard ISO containers in the Communist countries has developed more slowly than expected. The greatest use of containers by the Communist Armed Forces, predominantly East Germany, has been as shelters and workshops and for housing equipment systems. Transport of general supplies by containers is known to occur in only three countries (the U.S.S.R., East Germany, and Poland), although it probably occurs in Czechoslovakia as well. Only the Soviet Armed Forces have had any large-scale experience in the containerization of supplies, having used the small containers since the 1930's. However, they have had only limited experience in shipping by means of the large ISO 1C units. The most obvious reason why the Communist armies have not rapidly adopted containerization is that, with the obvious exception of the Soviet Union, their domestic supply lines are short. The free world countries, especially in Europe, cite the same reason for the lack of containerization of their own armies.

Karen J. P. Binney has been employed at the Army Foreign Science and Technology Center, Charlottesville, Virginia, since 1969. She is a graduate of the University of California, Los Angeles, California, with a B.A. degree in geography.

TMDE—Present and Future

by Second Lieutenant Carl A. Pantiskas

The author describes the current STE/ICE system and the developing improvements in test, measurement, and diagnostic equipment.

For years the thrust of field maintenance and repair has been to remove and replace parts to correct operational faults in equipment and materiel. Thus, perfectly good parts have often been needlessly replaced because the mechanic lacked the equipment and skills to accurately diagnose what was causing the problem. Army maintenance managers have long recognized the need for adequate test, measurement, and diagnostic equipment (TMDE) as a means of reducing the indiscriminate replacement of serviceable parts, particularly in automotive equipment.

The Army began a program in the early 1970's to improve troubleshooting and diagnosing of vehicle problems. Six years of intensive research and development resulted in producing a test and diagnostic system called simplified test equipment for internal combustion engines, or, more familiarly, STE/ICE. The system is comprised of a vehicle test meter, a transducer kit, connector cables, and the STE/ICE technical manual. All of the items are contained in a man-portable carrying case weighing about 55 pounds.

A mechanic can take the STE/ICE set to the field as easily as he can use it in a shop. The STE/ICE is powered by the battery of the vehicle being tested and will safely operate on a range of from 9 to 32 volts. This makes the system more useful to contact teams, since no special, separate power source is required. Unlike some other test, measurement, and diagnostic items, there is no risk of STE/ICE damage if polarity is reversed by inadvertently reversing the power leads. When this happens, the vehicle test meter will not turn on.

There are other STE/ICE advantages as compared with currently available automotive test, measurement, and diagnostic equipment items, too. The STE/ICE, for example, has a built-in self-testing mechanism so that the mechanic can be sure the equipment is working correctly before testing a vehicle. The STE/ICE test readings are also much easier to understand. Perhaps the most significant advantage is that STE/ICE can test functions that would otherwise require five separate test equipment items.

The STE/ICE can measure pressure, temperature, engine revolutions per minute (rpm), voltage, current, resistance, compression balance, engine power, and other functions of both gasoline and diesel engines. In all, STE/ICE can perform 45 different tests and measurements. The chart on page 32 provides a listing of STE/ICE capabilities as compared with the standard test, measurement, and diagnostic equipment items required to accomplish the same tests and measurements.

The chart also shows several test functions for which no conventional equipment is available, particularly the compression ignition power test and the compression

balance test. Both tests enable a mechanic to quickly determine the power efficiency of an internal combustion engine, a valid indicator of the need for engine replacement or overhaul.

The STE/ICE system is simpler to operate and test results are easier to understand. The mechanic selects the test function code from the technical manual for the vehicle being tested and enters it in the preprogramed vehicle test meter. The meter then converts the signal from a transducer into a visual, digital display. The mechanic can interpret the digital reading by referring to the flip cards mounted on the meter. These cards give the upper and lower tolerance limits for a particular test. There are also improved troubleshooting flow charts contained in the STE/ICE set for each vehicle on which the set will operate.

The STE/ICE sets have been available in the field for just over 2 years and service schools are training mechanics in the use of the sets. At the Ordnance Center and School, for example, students are receiving more than 50 hours of instruction on STE/ICE operation, preventive maintenance, and troubleshooting procedures for a variety of vehicles. Training efficiency test results indicate that this is ample time for students to achieve proficiency. Field reports also indicate that mechanics who have had no formal training in using the

□ **Components comprising the STE/ICE system.**

STE/ICE can test—	TMDE required for same tests—
Air cleaner pressure drop	None available
Airbox pressure	None available
Alternator-generator amps	Low voltage circuit tester (LVCT)
Alternator-generator output	LVCT or multimeter
Battery electrolyte level	Visual inspection
Battery internal resistance	None available
Battery resistance change	None available
Battery volts-amps	LVCT or multimeter
Coil primary resistance	Multimeter
Coil primary volts	LVCT or multimeter
Compression balance	Compression gage
Compression ignition power	None available
Coolant temperature	Vehicle gage
DC current (0-1,500 amps)	LVCT (0-500 amps)
DC voltage (0-39V)	Multimeter
Dwell angle	Tachometer-dwellmeter
Engine RPM	Tachometer-dwellmeter
Fuel filter pressure drop	Vacuum pressure gage
Fuel supply pressure	Vacuum pressure gage
Fuel supply return pressure	Pressure gage
Intake manifold vacuum	Vacuum gage
Negative cable voltage drop	Multimeter
Oil pressure	Vehicle gage
Oil temperature	Vehicle gage
Points voltage	Multimeter
Pressures (0-1,000 psi)	Pressure gage
Resistance (0-20 kilohms)	Multimeter
Spark ignition power	None available
Starter amps	LVCT
Starter amps (1st peak)	None available
Starter circuit resistance	None available
Starter volts	LVCT or multimeter
Temperatures (0-300°F.)	Thermometer
Turbocharger outlet pressure	None available
Vacuum (0-30 inches)	Vacuum gage

□ **Comparison of STE/ICE and standard TMDE capabilities.**

STE/ICE find it easy to use and rapidly become proficient in its operation.

The STE/ICE is a system of today, but what of tomorrow? Further improvement in test, measurement, and diagnostic equipment is being pursued. The Tank Automotive Command (TACOM) is investigating two concepts that have evolved from the STE/ICE development.

The first concept is the permanent installation of sensors and transducers at specific test points with permanently installed wiring harnesses leading to a centrally mounted, multipinned connector assembly. This allows the mechanic to quickly connect the vehicle test meter without having to climb all over the vehicle making individual connections to test points. This concept is being applied to the XM1 main battle tank and the M2 and M3 fighting vehicle systems.

The second concept is still in the development stage, but could radically alter maintenance procedures when it is fielded. This concept is to employ onboard computers to diagnose system functions. The computer would determine the troubleshooting procedure, analyze the input of test data, and display the results to the operator or mechanic. As planned, such a system would be capable of testing all subsystems of a vehicle, including automotive, turret and fire controls, and communications and electronics.

The potential of such a system is evident to anyone familiar with the long, drawn-out process of detecting and diagnosing equipment malfunctions. It can result in allotting more maintenance responsibility to the operator or crew, shorten diagnostic time, and increase end item availability for the user.

Increasingly complex combat vehicle systems, coupled with the fact that many soldiers lack proficiency in the required maintenance skills, cause problems in accurately diagnosing vehicle malfunctions. The Ordnance Center and School and the Tank-Automotive Command are responding to this problem by developing improved test equipment to satisfy field needs. The goal for the future is to make diagnosis easier, faster, and more economical than the "repair by replacement" method so frequently used today. ALOG

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It's Get Tough Time!

by Major Walter L. Seip II

The Army is placing increased command interest on property accountability. By reading AR 735-11 commanders can learn how to "get tough" and enforce logistics discipline.

Volumes have been written about war, but very little has been written about the time between wars. Much of what has been written usually tells of Johnny marching home again and the resulting unemployment. Hardly anything has been placed in the archives to guide future generations on how to deal or how not to deal with the materiel that is left when Johnny is about to go home or after he has returned.

Present-day Army commanders and logisticians in the Active and Reserve components are faced with managing materiel in a post-war environment. This managing seems to equate to the old adage of doing more with less. To do more with less, commanders and logisticians need to know how much of something they have, where it is located, and what shape it is in. Although our supply system is the best in the world, let us consider some of the negative aspects of supply. Specifically, "What happens when property accountability (the how much, where located, and in what shape) information is inaccurate?"

In April 1977, General Bernard W. Rogers, then Army Chief of Staff, expressed these same concerns. He informed his subordinate commanders that he had directed the Inspector General to conduct an audit and inspection of the management and accountability of Army materiel. He stated that he expected each commander to give his personal attention to the audit and to assume a conscious awareness of the importance of logistics discipline. He equated logistics discipline to command discipline.

The results of the worldwide audit confirmed General Roger's concern. The magnitude of the findings of the Army Inspector General audit were staggering. The inspection sampled 118 company-sized units throughout the world. If this sample was a valid representation of all Army units, then of the Army inventory worth about $12.5 billion, shortages for clothing, equipment, and tools Army-wide were estimated at $118.5 million. In a related effort, the Army Audit Agency found $117 million of discrepancies when it evaluated the property records of 15 Army installations in the United States and 4 division-sized units overseas.

In October, General Rogers told a Pentagon audience that "We all share the responsibility for this situation, but we simply are not going to tolerate this type of mismanagement in our Army." He attributed the problems to a lack of command involvement. His "get-tough" message ended by clearly stating that he expected a high level of command interest to be placed on property accountability. This command interest in property accountability was music to the ears of logisticians and was clearly a message to commanders to "get tough."

General Rogers directed the establishment of a property accountability task force to be headed by Major General Oren DeHaven, then Assistant Deputy Chief of Staff for Logistics. The mission of the task force was to correct the deficiencies revealed by the audit and to implement the recommendations contained in the report.

The immediate corrective actions instituted by the task force, although mostly administrative and procedural, are worth noting. They included improving the Army's property inventory procedures, providing adequate property accountability instruction to Army officers in service schools, revising the inventory adjustment report system, speeding up the publication and distribution of supply authorization documents, simplifying supply manuals and other documents, improving and simplifying the procedures for turning in excess property, prescribing actions to be taken in cases where there is a breach of supply discipline, and overhauling the report of survey system to insure that personnel pay for losses due to negligence.

During wartime, property accountability is a matter of getting required supplies to the right place at the right time and equipment that is lost, damaged, or destroyed is easily reported as a combat loss.

After a war ends, however, and there is a return to a more closely controlled property accountability environment, the loss, damage, or destruction of equipment does not go unnoticed. The "war stories" of the com-

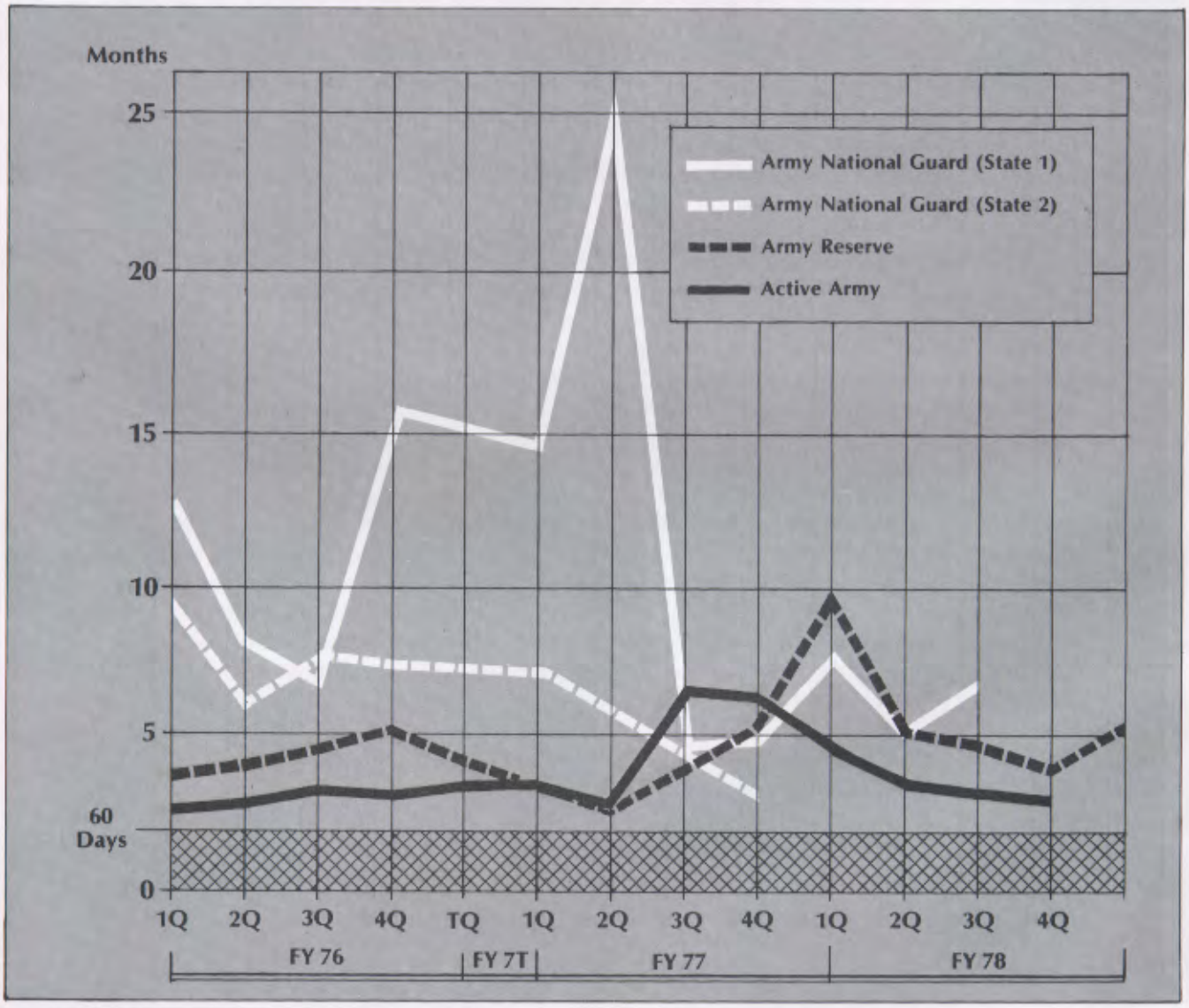
pany commander paying for the excess food rations he ordered by mistake, the soldier paying for the loss of his personal clothing and equipment, or the driver paying for the repair of a damaged truck can still be recalled.

The cycle of getting tough with negligent individuals started at the top with the opening boom of General Roger's cannon and the echoing volley of the immediate corrective actions of the DeHaven task force. History is once again repeating. The days of the Army asking payment from those individuals admitting liability for a loss are indeed alive and well. Methods used to collect include cash collection vouchers, statements of charges, and reports of survey.

As the results of the Inspector General's worldwide audit began to clarify, Pentagon staff officers quickly foresaw some of the recommended changes. A Department of the Army message on 25 August 1977 directed "a report of survey for any vehicle accident and major equipment damage in excess of $250 or when sufficient negligence to support the imposition of pecuniary liability was involved." This "get-tough" change to AR 735-11, Accounting for Lost, Damaged, and Destroyed Property, was soon made even tougher by the DeHaven task force.

The task force established a simple procedure for transmitting its directives and policy changes to the Army around the world. The guidance would flow as normal teletype traffic, but the messages were to be identified as a "Proper Count Flasher Message" and numbered sequentially.

The first Proper Count Flasher Message tightened the procedures on administrative inventory adjustments and made the $250 damage figure applicable to all equipment. This took the establishment of negligence out of the powers of the unit commander and placed it with a disinterested surveying officer.



☐ **Average processing time for reports of survey at one installation.**

The main weapon in a unit commander's arsenal for getting tough is the report of survey. The fact that it may be used makes it worthy of more than cursory investigation. To be sure, the threat of a report of survey is one way of placing command interest on property accountability.

The procedures for conducting a report of survey are detailed in AR 735-11. A thorough review of this regulation takes only a small investment of time, yet it could pay a big dividend in the future. The first chapter is only six pages long, but it contains enough jargon and definitions to "qualify" anyone reading it as an expert. The chapters dealing with processing procedures are only nine pages long. It should take less than 10 minutes to read and digest the information since four of the nine pages are tables, figures, and samples. If more time is available, the commander should take on the 21 pages dealing with appointing and approving authority. Since five pages consist of figures and tables, the reading time is again short.

Unlike many military publications, the appendices to AR 735-11 are as valuable as the main chapters. They outline the basic responsibilities of commanders and supervisors, major unit and battalion commanders, company and detachment commanders, hand receipt holders, approving authority, and unit personnel. Other information includes property accountability and adjustment data, a report of survey checklist, and a depreciation allowance for vehicles. Time spent in the reading of about 41 pages could well equip commanders at all levels with the knowledge of how to "get tough" and enforce logistics discipline.

The preparation of a report of survey is a tedious task. Perhaps "exasperating" is a better description. In any case, it is a commander's responsibility to enforce logistics discipline by means of this tool. At times it may seem to take all of the commander's available manhours. It will most assuredly consume those of a surveying officer. Time is at a premium since 5 working days is the target for initiating a report of survey. This is to insure that the facts are still fresh in the minds of those involved. Delays preclude adequate investigation and approved pecuniary charges are often uncollectible.

Delays seem to be the rule rather than the exception. The graph on the opposite page illustrates the experience at one Army installation. When reviewing it, keep in mind that 60 working days is the maximum total processing time allowed for completing reports of surveys.

It is quite obvious that, although some statistics were not available, in no instance was the 60-working-day objective even approximated by the average quarterly processing time shown. Commanders would seem to have gotten the "word" from General Rogers to place increased emphasis on completing reports of surveys within the maximum allowable time. (Note the trend for fiscal year 1978 and beyond.) Here is an obvious area in which higher level commanders must get tougher with their subordinates.

To add more recent command emphasis, General R. M. Shoemaker, FORSCOM Commander, recently commented—

> Each commander is responsible for managing all supplies and equipment authorized or utilized by members of his command. Commanders do not have to be accountable to be responsible. The Report of Survey System, AR 735-11, effective 1 January 1979, revised the definition of negligence to insure liability is fixed within the chain of command for inadequate command supervision.

This guidance has been fully supported by intermediate commanders. Lieutenant General John F. Forest, 1st United States Army commander, added that "Limited resources and world tensions dictate that commanders at every level be thoroughly knowledgeable and actively involved in assuring supply discipline and accountability."

As in the past, the tightening of belts after a war has meant intensively managing that small percentage of a total inventory that somehow eludes the best efforts of even skillful logisticians. General Roger's has placed this figure at about 3 percent. Needless to say, 3 percent of $12.5 billion is a lot of money. Well worth getting tough about!

Logistics discipline is one sure way of improving property accountability. A report of survey is but one aspect of a much larger scheme. James A. Huston in his *The Sinews of War: Army Logistics 1775–1953* ties the logistics future and the past together very succinctly—

> No one aspect of the Army's logistics experience can be singled out as most valuable in providing guidelines for the future, for the future is, as always, uncertain. One thing can be forecast with assurance—the continuation of change. But it may also be assumed that, however far-reaching the changes, there must always be links with the past.

History has shown that an Army can expect to tighten its belt after a conflict. The Chief of Staff has directed that it be done. Just as the DeHaven task force attacked logistics discipline on many fronts, so must commanders at all levels. The report of survey is one weapon in his arsenal. It takes a tough commander to make a subordinate pay for his or her negligence. Yet circumstances dictate intensification of logistics management. So commanders, it's "get-tough" time again! ALOG

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Product Information Feedback Systems

by Victor K. Evans

The establishing and maintaining of an information feedback system is vital to the success of any management process. Without this key element, management would be unable to determine the extent to which performance varied from established goals and standards and, therefore, would be unable to take corrective action.

The single most important source of information concerning product quality and performance of materiel is data generated at the operator and combat service support level of the field army. Complaints can be used by combat and materiel developers to evaluate "Fitness for use" aspects of the product.

However, it has been rumored that current complaint systems are so complex that they discourage rather than encourage information feedback. Rumor has it that it is simpler to dispose of substandard new parts and to order replacements than it is to report the failures back to materiel managers. If true, management needs to take action to correct the condition, since valuable dollars are being lost in the process.

A quick review of regulatory guidance indicates that a number of different complaint systems do, in fact, exist. Each of these systems has attributes that are unique to a specific class of supply or to a specific area of interest. Accordingly, each system has its own regulatory guidance that prescribes criteria for preparation and submission of a report. Most have special forms for recording the information. In some instances, depending on the type of complaint, it may be necessary to report the problem under more than one of the systems. The real challenge is in determining the applicability of the regulation to the situation.

A recently published regulation contains 24 different situations that must be considered before the complaint can be submitted. If the individual is successful in figuring out "when" and "where" to submit the complaint, he must determine "what" type of information is to be furnished and "where" it can be obtained.

What would you do if you were faced with this situation?

Assumption. You are a mechanic and have been recently assigned to a forward support company. You have received a new part from your supply support unit and are in the process of repairing a unit. After installing the new part and checking the repaired unit, you determine that the new part is defective. You decide to report the information in accordance with the regulatory guidance.

Condition. One of the blocks on the reporting form is titled "Manufacturer/Mfg. Code/Shipper." The instructions for preparation state "Enter the name or code of the manufacturer, maintenance contractor, or Government activity who last repaired or overhauled the deficient materiel, as applicable. When the shipper is different from the manufacturer, also include its name."

Problem. The name of the manufacturer is not marked on the part. The package that it was packed in at time of manufacture was removed during a care of supplies in storage operation at the wholesale level. How am I to determine the name of the manufacturer? The part does not contain a "manufacturer's code." (No problem since the instructions say "name or mfg code.") Since the item is new, I can rule out those instructions that pertain to "maintenance contractor, or Government activity who last repaired or overhauled the deficient materiel."

Eureka! Since I got the part from my back-up supply support company and I know that it has no manufacturing capability, then the "shipper" is different from the "manufacturer." Therefore, I guess I'll insert the "name" of the supply support company in the block.

Comment. It is not as ridiculous as it may sound.

The shocking aspect is that we are expecting the individuals at the lower echelons to decipher the requirement and to report the situation to the proper organization. Let's face it. It's doubtful that a high-paid logistician could figure it out without an undue expenditure of time, let alone a field level mechanic or supply specialist.

Accordingly, Is it prudent to exclude submission of complaints because of the unit price of the item? No doubt there is plenty of economic justification that can be offered in support of the rationale. Most persons would agree that costs associated with processing complaints on low-dollar-value material exceed the cost of the material. However, a random check of 229 parts, in supply class IX, revealed that each could be purchased by the retail system for less than $50.

Under the criteria contained in some of the regulations, a complaint would not be required if the item were substandard. Therefore, What is it costing the Army not to report these failures? Without such information, How can management purge stocks to preclude shipment of the substandard item to other field level users or correct the manufacturing process on ongoing contracts? How can money expended

Regulation	Form	Use to report
AR 30-4/30-16	DD Form 1608	Discrepancies in subsistence items.
AR 40-61	DD Form 1899	Discrepancies in standard medical supplies and equipment.
AR 55-38	SF 361	Carrier discrepancies.
AR 59-4	DA Form 1748-2	Airdrop materiel deficiencies (personnel and cargo).
AR 75-1	DA Form 4370-1	Missile and rocket malfunction.
AR 700-22	RCS CSGLD-1322 (R1) (Min)	Requirements, issues, losses, combat losses, gains, etc.
AR 700-58	DD Form 6	Packaging discrepancies.
AR 702-7	SF 368	Quality deficiencies.
AR 735-11	SF 363	Notification of carrier.
	SF 364	Deficiencies attributable to shipper.
	DD Form 200	Report of survey.
AR 735-11-2	SF 361	Transportation deficiencies.
	SF 364	Discrepancies attributable to shipper.
AR 795-8	SF 364	IL shipment discrepancy.
TM 38-750	SF 368	Equipment improvement report (EIR's).
	DA Form 2407	Warranty claims.
	DA Form 2415	Ammunition condition report.

☐ **Representative examples of reporting systems currently in use.**

on the substandard materiel be recouped—through voluntary replacement by the supplier or under the provisions of a warranty? What action, if any, should be taken to eliminate the supplier from future competition? How will other users of the item be made aware of the condition? Why not report all substandard materiel regardless of unit price?

The question raised is, Can the Army Logistics System function more effectively and efficiently with a simplified, central field level complaint feedback system or with complex, fragmented systems that are geared to special interest areas that do not require reports except under certain situations?

Some of the benefits that would be derived from a simplified, central system include—

• **Reduction in the number of regulations.** Cost savings would be automatic since printing, storage, and distribution expenditures would be less. The administrative burden would automatically decrease since there would be less material being maintained.

• **Reduction in the number of forms required.** Cost savings would be automatic in printing, storage, requisitioning, and distribution.

• **Simplification of training programs.** A single course of instruction could be developed and included in the military occupational specialty and applicable civilian career program training curriculum.

• **Involvement of field-level personnel** in preparing reports on materiel that is substandard or fails to meet "fitness for use" criteria.

The Army needs to require materiel developers to establish a central point for processing and responding to customer complaints. Most large distributors and retailers of commercial goods have a centralized customer complaint department. The public is not expected to determine which one of the internal units of the corporation has management responsibilities or control of the product. Why then should the "persons in the trenches" be expected to do so when they have a problem with an item of supply? Why shouldn't the same concept be applied to complaint feedback systems that is applied to the volunteer Army—that is, encourage feedback of complaint information on a volunteer basis by consolidating, simplifying, and minimizing the data required.

A well-conceived complaint feedback system needs to be developed and implemented on an Army-wide basis. It should be designed so that only the minimum essential information needs to be furnished from the originating level. Additional pertinent information should be furnished by "interest groups" as it is processed through the system. It should mandate that all field level complaints must be investigated and a response provided to the originator. It should make maximum use of automatic data processing equipment. Machine-readable forms should be used to the maximum extent. Lastly, instructions for preparation must be clear and concise.

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A LOG DIGEST

LOGISTICS UNITS VULNERABLE TO CHEMICAL ATTACK

Seven types of logistics units would suffer disproportionate productivity losses in a chemical attack in Europe. According to a recently completed study of the Army Logistics System's ability to survive chemical warfare in Europe, the vulnerable units are conventional ordnance ammunition companies; general support level general supply companies, repair parts companies, and heavy equipment maintenance companies; direct support level forward maintenance companies and rear maintenance companies; and general hospitals. The study examined 25 types of logistics units.

These units are considered vulnerable because loss of personnel with critical skills would severely hamper each unit's mission effectiveness. Also, the difficulty of performing intricate tasks while wearing bulky protective clothing and the damaging effect of some decontaminants on certain equipment would contribute to the loss of productivity.

The study also cites the need for a contaminant sensing device in each unit. This device would enable each unit to focus post-attack decontamination on mission-essential equipment, saving both decontamination materials and time.

QUIETER TRACKED VEHICLES SOUGHT

The Army Human Engineering Laboratory, Aberdeen Proving Ground, Maryland, with other Army activities and private business firms, is studying ways to reduce the high noise levels produced by tracked vehicles.

The noise causes temporary, and sometimes permanent, hearing loss; interferes with intracrew communications; and makes the vehicle easier for the enemy to detect.

The study, currently limited to the M113 armored personnel carrier, is now focusing on reducing the noise made by the track and suspension system. Hull and engine noise reduction will be studied later.

DOD STRENGTHENS DRIS PROGRAM

The Department of Defense (DOD) has developed a procedure for resolving interservice disputes about consolidating installation support functions on a regional basis. Under the procedure, disputes that cannot be settled by the Defense Retail Interservice Support (DRIS) Program Office will be decided by the Office of the Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics. The DRIS office, located in the Defense Logistics Agency, administers DOD efforts to consolidate support services under policy direction of the Office of the Assistant Secretary. Each service remains responsible for fostering intraservice consolidation of its installation support functions.

According to a DOD spokesman, the procedure for resolving disagreements between the services should strengthen the authority of the DRIS office and permit DOD to increase interservice pooling of installation support functions. A recent General Accounting Office study criticized the DOD consolidation effort as a voluntary, decentralized program that was often frustrated by the opposition of local commanders. The GAO recommended creation of a centralized office to coordinate both interservice and intraservice consolidation projects.

☐ By April, the Army plans to distribute 226 semitrailer-mounted water distributors (above) to engineer construction units worldwide. The 6,000-gallon capacity distributor, which can be towed by a standard military truck tractor, will replace the current 1,000-gallon truck-mounted distributor. It will be used to compact soil and control dust at construction sites and has a limited fire-fighting capability. A 600-gallon-per-minute pump and two nozzles produce a 70-foot-wide spray pattern.

DOD REJECTS JOINT COMMISSARY AGENCY

The Department of Defense has decided not to consolidate the commissary systems of the four armed services at this time. Rather than create a joint commissary management agency, the Department has established the Department of Defense Commissary Executive Board. The Board, located in the Office of the Secretary of Defense, will set goals for, provide guidance to, and evaluate the performance of the four commissary systems.

The members of the Board include the Deputy Assistant Secretaries of Defense for Military Personnel Policy and for Supply, Maintenance, and Transportation and the commanders of the Army Troop Support Agency, the Navy Resale and Service Support Office, the Air Force Commissary Service, and the Director, Marine Corps Facilities and Services Division.

ARMY CHANGES CONUS COMMAND AND CONTROL STRUCTURE

The Chief of Staff has approved changes in the continental United States (CONUS) command and control structure to improve Army capabilities to meet mobilization and deployment requirements. The major changes, recommended in the Army Command and Control Study-82, include the following—

- The nine existing Army readiness regions will be abolished and replaced by nine Army readiness and mobilization regions (ARMR) at the same locations. The ARMR, in addition to performing the duties currently executed by the ARR, will supervise all mobilization planning within their regions and will command the Army National Guard State Area Commands upon mobilization.
- Selected major commands will assume limited peacetime operational control of specified Reserve component (RC) nondeploying and late-deploying units for purposes of mobilization planning, training supervision, and evaluation.
- More mobilization planners will be assigned to Department of the Army and Forces Command (FORSCOM) headquarters, the CONUS armies, and all mobilization stations.

The Chief of Staff has also approved a recommendation that a new CONUS corps headquarters be established to reduce the number of units reporting directly to FORSCOM headquarters.

The command and control study also recommended that each Army Reserve Command be assigned to manage a CONUS installation in its vicinity upon mobilization. This proposal is currently being studied.

The changes are designed to remedy the following problems—

- Layering and duplication of headquarters in the chain of command between the CONUS armies and RC units.
- Excessive span of control of FORSCOM headquarters.
- Inadequacy of communication between the CONUS armies and the Army National Guard State Area Commands.
- Lack of clearly defined responsibilities for installation management upon mobilization.
- Lack of valid post mobilization missions for many RC units.

The approved changes were tested in the mobilization exercise, MOBEX '80, in November 1980.

BRIDGE ERECTION BOAT PURCHASED

The Army has awarded a $16.9-million contract to a British firm for production of 102 combat support boats to move floating ribbon bridges.

The new boat, already being built for the British Army, will be delivered to U.S. Army units beginning in November 1981. It is 27 feet long, has a shallow draft and a top speed of 25 miles per hour, and is "unsinkable."

The contract for the boat also calls for a full 2-year supply of spare parts, a 1-year warranty, parts manuals, provisioning software, operation of a depot facility, and services of a technical field representative.

☐ The jet-powered combat support boat pushes an interior bay of a ribbon bridge into position.

☐ To increase efficiency in helicopter maintenance, Hughes Helicopters has outfitted the YAH-64 advanced attack helicopter with several built-in work platforms. The platform shown above serves as the cover for an engine nacelle. The built-in platforms are designed to reduce the need for special support workstands in performing helicopter maintenance.

AAH MAINTENANCE TRAINING BEGINS

The Army has begun training personnel in maintenance of the YAH-64 advanced attack helicopter (AAH) at the military maintenance training center operated by Hughes Helicopters at Culver City, California. Approximately 150 soldiers are being trained in military occupational specialities, including avionics mechanic, airframe subsystem mechanic, fire control repairer, and attack helicopter repairer.

The soldiers proceed through three phases of training. Initial instruction takes place on computer-driven panel trainers, which simulate all AAH component systems and permit instructors to insert defects that students must correct. The second phase gives students hands-on training on replicas of AAH systems known as aircraft equipment trainers. In the third phase, students demonstrate their skills on actual AAH flight test vehicles.

The AAH maintenance training course uses the first Army aviation technical manuals to be designed according to the skill performance aids (SPA) format. A SPA manual provides each mechanic with a simple text and accompanying illustrations for each step of a maintenance operation.

M915 WRECKER KIT PROPOSED

The Army Training and Doctrine Command is preparing a letter of requirement recommending standard procurement of commercial wrecker boom kits to be used to convert M915, M916, and M920 truck tractors into recovery vehicles. Wrecker booms are currently obtained through local purchases.

If the proposal is approved during an in-process review, the kit will be used to supplement existing wheeled wreckers. The kit consists of the boom, tow bar, cross pipes, chains, and other accessories and can be attached to the truck tractor's fifth wheel without any modification to the vehicle.

STUDY FINDS FOOD SERVICE CHANGES NEEDED

A recent study by the Defense Audit Service (DAS) of the Department of Defense food service program revealed problems in the control of food inventories and access to rations in-kind. The DAS concluded that recent corrective actions have not proved effective and estimated that mismanagement in the Defense Department food service program could be costing the Government as much as $100 million a year.

The DAS found that—

- Controls on meal cards are lax and unauthorized persons can obtain free meals. (Investigators found that 63 percent of all Army installations do not maintain adequate meal card registers and 33 percent do not verify meal cards.)

- Headcount signature sheets, used to compute a dining facility's monetary food allowance, are often poorly maintained, sometimes inaccurate, and on occasion padded in order to obtain greater allowances.

- Improperly prepared cooks' worksheets, combined with inaccurate headcounts, often cause discrepancies in food inventories and reduce accountability.

Special feeding arrangements, such as field feeding, fast-food lines, and ethnic meals, are loosely controlled and often abused.

To increase accountability and reduce waste and

fraud, the DAS recommends installing computerized cash registers in dining facilities and using plastic, machine-readable meal cards. The cash registers could be programed to validate meal cards and inventory food items as they are dispensed.

In response to the DAS study, the Department of Defense has instructed the Army to develop an automated headcount system as an alternative to computerized cash registers. The system will use plastic meal cards and computer terminals located at each dining facility. The Army believes that computerized cash registers would have limited application because of the frequency of field feeding and the large number of unit, rather than installation, dining facilities. According to an Army spokesman, if the automated headcount system is approved, all four services will be able to use it in situations where computerized cash registers are not cost-effective.

☐ The Army Quartermaster School at Fort Lee, Virginia, has received exhibits and related materials on petroleum geology and technology from the Smithsonian Institution for use in training petroleum managers. The materials, developed mostly by private industry, became available to the Army when the Smithsonian began a general revision of its exhibits. The exhibits, such as the model of ocean-floor drilling rigs shown above, help provide background on commercial oil exploration, drilling, and transportation to Army petroleum students.

ARMY CHIEF STRESSES READINESS

The Army Chief of Staff, General Edward C. Meyer, recently announced policy changes designed to promote Army readiness. The planned changes, some to be effective immediately and some still under study, comprise a package that should increase unit stability and enhance cohesion.

The plans are to—

- Eliminate the practice of bringing units up to full strength for exercises. Units will "come-as-they-are."
- Eliminate overstrengths in certain selected units.
- Reduce oversea unit overstrengths to 100 percent of their personnel authorizations.
- Develop a test plan to rotate company-sized units as opposed to the current individual replacement system.
- Recruit new soldiers for the company rotation plan.
- Direct that captains commanding company-sized units retain command for 18 months.
- Curtail exempting certain units from personnel assignment ceilings and providing special assignment guidance.
- Standardize Army combat unit authorization documents.
- Permit periodic adjustments in the times when officers will be eligible for promotion to first lieutenant, captain, and major to aid in eliminating company-level officer shortages.
- Develop additional peacetime awards and distinctive uniform items.

The Army is considering a return to the policy of assigning combat support and combat service support officers to combat arms tours. Also under consideration are increased benefits for soldiers, who, because of specialty shortages, must spend frequent and repetitive tours overseas.

NEW CLP APPROVED

The Army has approved the use of a new bore cleaner, lubricant, and preservative (CLP) on all large- and small-caliber weapon systems. Known as Break-Free, it resists breakdown under heat and pressure and does not attract dust, grit, or powder residue.

Units may order Break-Free CLP in either liquid or aerosol form by using the following national stock numbers—

- 9150-01-053-6688, 1 gallon, liquid, Break-Free CLP-7.
- 9150-01-054-6453, 1 pint, liquid with trigger/sprayer, Break-Free CLP-5.
- 9150-01-079-6123, 1 ounce, liquid, Break-Free CLP-1.
- 9150-01-079-6124, 4 ounces, liquid, Break-Free CLP-4.
- 9150-01-079-6125, 16 ounces, aerosol, Break-Free CLP-3.
- 9150-01-079-6126, 3 ounces, aerosol, Break-Free CLP-2.

ALOG

CAREER PROGRAMS

CIVILIAN LOGISTICS CAREERS TO BE STUDIED

A study group, with representation from the ODCSLOG, ODCSPER, the Army Secretariat, and logistics functional area experts, is planning a study of the career development and management of civilian logisticians. The purpose is to find options in training methods and assignment policies to broaden the careerist's qualifications and career opportunities.

The study will include a review of specific logistics positions and the qualifications required to fill them. It will also examine the career development methods used in Army civilian career programs such as supply, maintenance, and transportation, and in similar career programs of the other services.

MOBDES POSITIONS OPEN

The Army is seeking approximately 3,000 reservists to fill mobilization designee (MOBDES) positions in Active Army units. Combat service support and combat support positions available include materiel management and procurement, marine operations, communications, personnel management, and automatic data processing.

The MOBDES program assigns individual officer and enlisted personnel to positions in the Active Army that they will fill upon mobilization. Each designee receives extensive orientation in his assignment, including an annual 2-week tour of duty.

Reservists desiring further information, including a list of the MOBDES positions available in their specialty, should write their personnel manager at the U.S. Army Reserve Components Personnel and Administration Center, 9700 Page Boulevard, St. Louis, Missouri 63132.

TRANSITION TRAINING FOR SUPPLY SOLDIERS READY

The Army Quartermaster School has prepared transition training for soldiers affected by the elimination of MOS 76D, materiel supply specialist.

Training extension course lessons and Army correspondence courses are available for the new MOS 76C, equipment records and repair parts specialist; 76P, materiel control and accounting specialist; and 76V, materiel storage and handling specialist. In addition, a 9-week resident course for soldiers in MOS 76C is being offered at the School.

An announcement of available lessons and courses is now being prepared. Until it is distributed, interested persons may address inquiries to—Commandant, U.S. Army Quartermaster School, ATTN: ATSM-TD-SP, Fort Lee, Virginia 23801, or call AUTOVON 687-4928.

MILPERCEN REORGANIZES

Reorganization of the Officer Personnel Management Directorate of the Military Personnel Center (MILPERCEN) is scheduled for completion in February 1981. The final phase of the reorganization will transfer responsibility for personnel management of lieutenant colonels to the new combat arms, combat support arms, and combat service support divisions. Management responsibility for company-grade officers and majors was transferred to the new functional divisions in April and August 1980, respectively. The reorganization will not affect the colonels and warrant officers divisions.

Following are the management sections and branches within the combat service support division, their phone numbers (the AUTOVON prefix is 221), and the officer specialties for which each section is responsible—

Chief of the division—8115/8116; personnel actions branch—0686/0687; professional development branch—9697/9765/9766; personnel assignment branch—8858; adjutant general section—8106/8107 (specialties 41, 42, 43); finance management section—8122 (specialties 44, 45); ordnance management section—8109/8110 (specialties 51, 73, 75, 76, 77, 91, 97); quartermaster management section—8119/8123 (specialties 81, 82, 92); transportation management section—8112/8120 (specialties 71, 87, 88, 95).

ALMC OFFERS CCSS TRAINING

The Army Logistics Management Center has developed a Commodity Command Standard System (CCSS) Functional Course. The 2-week course covers the functions of CCSS, describes how they interrelate, and explains the CCSS interfaces with other logistics systems.

A resident course at ALMC is scheduled in March, and five onsite courses will be presented between April and September at DARCOM major subordinate commands. A CCSS Executive Seminar for top-level managers will also be presented in those months.

Interested persons may obtain additional information about course and seminar contents and schedules by writing to—Commandant, USALMC, ATTN: DRXMC-MR-MS, Fort Lee, Virginia 23801, or calling AUTOVON 687-4230.

RECENTLY PUBLISHED

AR 11-29, Affiliation Program, 1 November 1980.
AR 70-15, C1, Product Improvement of Materiel, 1 August 1980.
AR 381-26, Army Foreign Materiel Exploitation Program, 15 November 1980.
AR 670-2, Life Cycle Management of Army Uniforms, 1 October 1980.
AR 700-15, C5, Packaging of Materiel, 15 September 1980.
AR 700-47, Defense Standardization and Specification Program, 1 November 1980.
AR 710-2, C6, Materiel Management for Using Units, Support Units, and Installations, 1 October 1980.
AR 725-50, Interim Change 7, Requisition and Issue of Supplies and Equipment Requisitioning, Receipt, and Issue System, 22 September 1980.
AR 725-50, Interim Change 8, Requisition and Issue of Supplies and Equipment Requisitioning, Receipt, and Issue System, 10 October 1980.
AR 725-50, C9, Requisitioning, Receipt, and Issue System, 1 October 1980.
AR 735-11-2, C1, Reporting of Item and Packaging Discrepancies, 1 August 1980.
DA Pam 310-7, U.S. Army Equipment Index of Modification Work Orders, 1 August 1980.
DA Pam 600-8-2, Standard Installation/Division Personnel System (SIDPERS), Military Personnel Office Level Procedures, 1 September 1980.
DA Pam 608-33, Casualty Assistance Handbook, 15 September 1980.
DA Cir 310-80-5, Base-Level Commercial Equipment, 1 October 1980.
DA Cir 755-80-1, Disposition of Condition Code "P" Major End Items, 1 December 1980.
DOD Directive 1100.18, Wartime Manpower Planning, 26 August 1980.
DOD Directive 1330.9, C2, Armed Services Exchange Regulations, 8 July 1980.
DOD Directive 4100.39, The Defense Integrated Data System (DIDS), 11 September 1980.
DOD Directive 5000.40, Reliability and Maintainability, 8 July 1980.
DOD Directive 5015.2, Records Management Program, 17 September 1980.
DOD Regulation 1100.19, Wartime Manpower Program Policies and Procedures, 8 September 1980.
DOD Regulation 2010.9, Mutual Logistic Support Between the United States and Other NATO Forces, 25 August 1980.
DOD Regulation 4500.34-R, C23, Personal Property Traffic Management, 1 September 1980.
DOD Regulation 5100.84, Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives at Contractor Facilities, 23 September 1980.

NOTE—*The date listed after the publication title is the date of technical edit. Printing and distribution usually occur several months after this date.*

STANDARDIZATION ROLE SET

Revised AR 700-47, Defense Standardization and Specification Program (DSSP), establishes policies and procedures for the Army portion of the DSSP and assigns Army-wide responsibility for direction of the program to the commander of the Army Materiel Development and Readiness Command.

The purpose of the DSSP is to increase uniformity in engineering practices and materials used by the Department of Defense.

AR 710-2 CHANGED

Change 6 to AR 710-2, Materiel Management for Using Units, Support Units, and Installations, incorporates the Command Supply Discipline Program, which was transferred from AR 710-1, and contains provisions of the DOD Retail Inventory Management Stockage Policy (RIMSTOP). It also includes procedures applicable to the Army National Guard.

PACKAGING GUIDE OUT

Change 5 to AR 700-15, Packaging of Materiel, provides guidance on the use and control of reusable packaging materials and containers. Reusable containers are designed to have minimum adverse environmental impacts. The change defines general purpose and specialized reusable containers and stipulates that data on specialized containers should be provided to the Container Design Retrieval Management Office, Eglin Air Force Base, Florida.

ALOG FORUM

UNIFORM PICKS

Reference "Year-Round Uniforms Coming" story in the September-October 1980 issue.

I thought we had a year-round uniform with the issue of lightweight Army greens—not the best looking uniform, but I suppose satisfactory. Seems to me that funds would be more appropriately spent on new or updated equipment than on clothing.

CW2 EDWARD B. MONROE,
CA ARNG

The article stated that "Within the next 2 years, the Army plans to begin replacing the current Winter- and Summer-weight green uniforms with men's and women's green uniforms that can be worn year round. The fabric of the year-round uniform will be a blend of 55 percent polyester and 45 percent wool."

DISCOM-G4 ROLES

As a former DISCOM commander (2d Inf Div, '77-'78), I was both surprised and disappointed in Major Sidebottom's analysis and recommendations in "The Division's Logistician," (Sep-Oct 80). Apparently he had experienced sufficient lack of cohesion among the division G4, DISCOM command element, and the DMMC to warrant a substantial change from the traditional staffer vs. operator roles of the G4 and DISCOM.

The author mentions examples of poor communications and attendant poor coordination between the G4 and DMMC with resultant disconnects between logistics operations and information and tactical plans and requirements. Although he correctly identifies the source of the problem—poor coordination—he fails to treat that disease and suggests transferring the G4 staff function to the DISCOM or placing the DMMC under the direct staff supervision of the G4. Neither option is desirable. The DMMC is both the principal supply and maintenance operator for the DISCOM commander and the repository of logistics data and information needed by the G4.

Because DMMC is the nerve center for DISCOM, it must remain in that organization. The DISCOM commander's span of control is now extended and should not be further expanded to include the G4 staff function. The horrible examples of poor coordination between logistics and tactical operations appeared to be the direct result of inexperience, lack of professionalism, and/or bureaucratic arrogance. Let's overcome these before we throw away a proven staff and line concept that can and, in most cases, does work.

BG HENRY J. HATCH, USA
Division Engineer

I must take exception to Major William J. Sidebottom's premise in his article "The Division's Logistician" in the September-October 1980 edition of the *Army Logistician*.

He describes three problem areas, one concerning availability of maintenance float data, another concerning reallocation of ammunition resources, and a third concerning POL resources. Although his basic argument is the conflict between the DISCOM commander and the AC of S, G4, he states that creation of the DMMC has increased the potential for disruption of the plans and in programs of the AC of S, G4. In actuality, all three problems could have occurred just as easily prior to the establishment of the DMMC, because all three were DISCOM functions long before the DMMC was created.

Major Sidebottom does, however, describe a communications problem, which is very real indeed. This problem has two facets. First, unless recent changes have occurred in mechanized divisions, the number of secure communications links of data-link quality are insufficient in a mechanized division, particularly in a dispersed battlefield, such as would be found in Europe. This is a severe problem which must be overcome if logistics data in meaningful form are to be transmitted quickly and effectively. Second, there can be a real personal communications problem between the DISCOM commander, and thus all portions of DISCOM, to include the DMMC, and the AC of S, G4 and his office. This problem can be more severe than the former, if these two officers compete to keep the division commander informed, rather than working closely together to insure that planning and information flow are smooth and continuous.

Coordination, cooperation, and communication form the answer. The logistics planner, the AC of S, G4, and the logistics operator, the DISCOM commander, must insure that all three occur.

COL JAMES M. DURHAM, OD
Commander, Mainz Army Depot
APO NY 09185

LONG WAY TO GO

Your September-October 1980 issue of *Army Logistician* was particularly good. It contained some very useful stuff.

We have a long way to go before our maintenance and supply systems are tuned up so that we can be reasonably confident of our ability for sustained battlefield operations!

MG W. F. ULMER, JR., USA
3d Armored Division

OILY EXCHANGE

One of the ALOG Emphasis articles, "Oil Changes Changed" on page 48 of the September-October 1980 issue, is in error. The second sentence should read, "Previously, oil and filter changes were based on mileage or hours of operation or calendar time." You omitted the reason for the majority of oil and filter changes—"calendar time." Your statement reflects the current policy for oil and filter changes; however, even with the energy shortage, the

archaic practice of changing lubricants by the passage of time instead of operational use continues.

ROBERT L. TANNAHILL
Maintenance Engineer, TACOM

Error: No. Incomplete: Perhaps.
The news story's purpose was to inform readers that Army oil analysis laboratories will now determine the need and direct the timing for changing oil and oil filters of components and equipment in the CONUS.

QUESTIONS POMCUS

In reference to the article "POMCUS—A Bright Picture" published in the September-October issue of *Army Logistician*, the author states that pre-positioning of unit sets of equipment in Western Europe is a viable alternative to stationing increasingly expensive Active Army units there. It does seem to be a viable concept in support of peacetime exercises, as has been proven during the Reforger exercises. However, whether it will prove its worth during wartime or not is the real test.

I believe that it is a safe assumption that the opposing forces know of POMCUS and have placed the sites high on their priority targets list. If so, POMCUS may prove to have been a disastrous concept, as replacement/reinforcements arrive in Europe only to find that the POMCUS sites were destroyed in the first few hours of the war.

MAJ ROGER S. COLLINS, AD
Advisor, NM ARNG

EXPLAINS POMCUS

Reference your lead ALOG Forum article in the July-August 1980 issue of the *Army Logistician* entitled "A POMCUS Difference." In the brief comment by Captain Perry L. Price, USAR, he alludes to an apparent misstatement concerning the readiness of POMCUS equipment and in contradiction of an assessment made by the NATO Supreme Allied Commander, General Bernard Rogers.

Pre-positioned war reserve material on which General Rogers commented is not POMCUS material. POMCUS materials are maintained and stored at various locations throughout Western Europe under the control of the 21st Support Command and Combat Equipment Group-Europe (CEGE) while pre-positioned war reserves are stored in Army depots throughout the area. POMCUS is designed for initial issue to deploying units into the European theater while war reserve is generally for replacement of destroyed or damaged equipment. Furthermore, the readiness of POMCUS equipment has improved drastically since 1976 to a state where the annual Reforger exercises using POMCUS equipment indicate higher readiness rates for POMCUS equipment than the equipment brought into country for the exercise and equipment of supporting units from within Germany.

Hopefully, this very brief explanation will clarify the distinction between these types of equipment and wash away any seeming disparity which in fact is a misunderstanding of terms.

MAJ ROBERT E. THORNTON, QMC
USA Fourth ROTC Region, SIG

Address letters to ALOG Forum, *Army Logistician*, ALMC, Fort Lee, Virginia 23801.

ALOG RESEARCH REPORTS

The Application of Quantity Discounts in Army Procurements (Field Test); sponsored by U.S. Army Materiel Development and Readiness Command; conducted by U.S. Army Logistics Management Center (Inventory Research Office and Procurement Research Office). Study Information—AUTOVON 444-3808. Status: Completed.

This study presents the results of a field test of procuring secondary items in large quantities. It concludes that significant savings may result from soliciting bids on quantities larger than the basic economic order quantity when unit costs are reduced. Acquiring larger quantities of materiel also reduces procurement workloads and improves supply availability. The study includes a formula that calculates when a larger quantity purchase is cost-effective and recommends that a quantity discount program be implemented at all materiel readiness commands.

DESCOM Tool Crib and Self-Service Supply Center Analysis; sponsored by the Depot System Command (DESCOM); conducted by Corpus Christi and Tooele Army Depots. Study Information—AUTOVON 242-7531. Status: Completed.

This study resulted in 11 recommendations now being implemented to standardize accountability and cost control methods in all tool cribs and self-service supply centers (SSSC's) within DESCOM depots. Recommendations included automating tool crib operations and establishing SSSC's at all depots except Corpus Christi, which is already supported by a Navy equivalent to SSSC's. ALOG

ALOG EMPHASIS

(Continued from page 1)

BACK TO LSN's

The Department of Defense has authorized the Defense Logistics Agency to continue using local stock numbers (LSN's) for subsistence commissary resale items after the implementation of the Defense Integrated Subsistence Management System (DISMS). It was originally planned to assign national stock numbers (NSN's) to these items. The NSN's will be required for those commissary resale items that have already been assigned an NSN. The Defense Personnel Support Center is redesigning the DISMS to permit use of LSN's.

SHADES OF WW II

The Army has approved the use of dark underwear, towels, and handkerchiefs with the new battledress clothing system. The dark items, which will replace white articles currently issued to soldiers, will be designed to increase camouflage protection. Depending on the results of tests recently conducted by the Training and Doctrine Command, the items will be either brown or green and should be ready for issue in fiscal year 1982.

ALPC MEETS IN JANUARY

The 16th meeting of the Army Logistics Policy Council (ALPC) will be held 22 and 23 January at the Army Logistics Center, Fort Lee, Virginia. The theme will be "Logistics Support for the Army of the Eighties." The council meets periodically to provide central direction for the development, maintenance, and coordination of the Army Logistics System.

ADMIN CENTER REORGANIZED

The Army has approved a reorganization of the U.S. Army Administration Center at Fort Benjamin Harrison, Indiana. The Center, renamed the Army Soldier Support Center, continues as the Army proponent for personnel and financial management, administrative services, and computer-based information systems. Under it, the Institute of Personnel and Resource Management replaces the former Institutes of Personnel and Administration. The new Institute consists of four schools: Adjutant General, Computer Science, Finance, and Personnel Management.

MTMC READIES CORE PLANS

The Military Traffic Management Command (MTMC), the Interstate Commerce Commission, other Federal agencies, and transportation associations have developed "quick reaction procedures" to give the Department of Defense priority to use, under emergency conditions, trucks and railcars owned by the commercial transportation industry. These procedures constitute MTMC's Contingency Response (CORE) Program, which is patterned after the Military Airlift Command's Civil Reserve Air Fleet and the Military Sealift Command's Sealift Readiness Program.

POL COMPANY ACTIVATED

To increase its ability to operate tactical marine terminals (TMT) and pipelines, the Army has activated its second petroleum operating company, the 549th Quartermaster Company (Pipeline and Terminal Operating) at Fort Story, Virginia. The only other Active Army unit possessing the capability to operate the terminals is the 267th Quartermaster Company (Pipeline and Terminal Operating) at Fort Lee, Virginia. Two Army Reserve companies have received training in tactical marine terminal operations.

CLRTX NEWS PUBLISHED

The Army Logistics Evaluation Agency is publishing a quarterly newsletter that covers significant findings of command logistics review teams, expanded (CLRTX). Titled "CLRTX," the newsletter describes some of the problems and trends indentified during CLRT and CLRTX visits that apply to logistics readiness and posture. Interested persons may obtain the newsletter by writing to—Commander, U.S. Army Logistics Evaluation Agency, ATTN: DALO-LER, New Cumberland Army Depot, New Cumberland, Pennsylvania 17070, or calling AUTOVON 977-7205.

CREDIT CARD ID's COMING

The Department of Defense has approved a new plastic identification card for use by active duty military personnel, retirees, and dependents. The card, similar to a commercial credit card, will replace both the existing paper ID and the medical privilege card. In the future, it could also replace the meal card currently used in dining facilities. The new ID will be used in connection with a worldwide computer system designed to reduce misuse and fraud. Distribution of the cards is planned for fiscal year 1982.

HANDBOOK IDEAS SOUGHT

The Army Logistics Center is developing a German-U.S. Army logistics interoperability handbook and is seeking examples or ideas from the field. The handbook, which will be expanded to include other NATO nations, will identify points of entry into U.S. Army supply, maintenance, and transportation systems at brigade, division, and corps levels. Ideas should be sent to—Commander, USALOGC, ATTN: ATCL-CTZ, Fort Lee, Virginia 23801.

TAEDP AIDS REQUISITIONS

The Army Depot System Command (DESCOM) has developed a requisition validation program as part of the automated Total Army Equipment Distribution Program (TAEDP). Installation supply offices and major command and corps elements will use the requisition validation program, which contains asset data, requirements data, and projected distribution data, to obtain information on unit requirements and availability of assets that they need to substantiate requisitions for equipment.

REVIEW* IS NOW *INTERSERVICE

The American Logistics Association (ALA) has published the first issue of its new quarterly journal, *Interservice*. The new magazine, which replaces the Association's bimonthly *Review*, will focus on defense and military resale marketing and ALA policy positions. Annual subscriptions cost $25 ($35 overseas) and may be ordered from the ALA at 5205 Leesburg Pike, Suite 1213, Falls Church, Virginia 22041.

DOD FURNITURE BUYS APPROVED

The General Services Administration (GSA) and the Office of Management and Budget (OMB) have approved a modified version of the Department of Defense (DOD) furniture requirements plan for fiscal year 1981. In the plan, the Army identified furniture requirements valued at $71 million. Approval of the plan by GSA and OMB removes DOD from the current moratorium on purchases of new furniture. The moratorium had left DOD unable to furnish and occupy some new barracks and office buildings.

WHITE PAPER HITS READINESS

The American Defense Preparedness Association has published a "white paper," titled "Defense Readiness—Forces Sustainability and Industrial Preparedness." It concludes that while the deterioration of the defense industrial base and the Armed Forces' materiel readiness and sustainability has long been recognized, there has been little or no change in the situation. The Association recommends reversing this trend with priority policies and programs to equip the total force, provide adequate war reserves, and improve readiness of the industrial base.

ORDNANCE HALL MEMBERS SOUGHT

Nominations for the Ordnance Hall of Fame are being accepted until 15 January. Any retired or deceased person who has contributed significantly to advancing the mission of the Ordnance Corps may be nominated. Nominations should be submitted to—Commander, U.S. Army Ordnance Center and School, ATTN: ATSL-DOS, Aberdeen Proving Ground, Maryland 21005. Further information may be obtained by calling AUTOVON 283-5334 or commercial area code (301) 278-5334. Selections will be announced in March.

SAILS SCHEDULE

The ODCSLOG has announced the following schedule for extension of SAILS-ABX in 1981: January, Ft. McCoy, WI, and Ft. Huachuca, AR; February, Ft. Benning, GA, and Ft. Devens, MA; March, Ft. Bliss, TX, and Ft. Polk, LA; April, Ft. Knox, KY, and Ft. Drum, NY; May, Ft. Dix, NJ, Ft. Stewart, GA, and USMA, West Point, NY; June, Ft. Leavenworth, KS, and Fitzsimons AMC, CO; July, Ft. Benjamin Harrison, IN, Ft. Irwin, CA, and Ft. Lewis, WA; August, Ft. Leonard Wood, MO; September, 103d COSCOM (USAR), Des Moines, IA; and November, Ft. Jackson, SC, Ft. Riley, KS, and Ft. Amador, Panama.

CONTAINER STUDIES LISTED

A bibliography of studies on the subject of "Containers" may be obtained by writing DLSIE, ALMC, Fort Lee, Virginia 23801, or by calling AUTOVON 687-4655 or commercial (804) 734-4655.

FILM ON UNIT MOVES OFFERED

The Army Field Artillery Center has produced a film on preparing units for emergency deployment readiness exercises. The film depicts in sequence the actions a unit must take to deploy in a combat or civil emergency. A copy of the film may be obtained by sending a blank video cassette, 1 hour in length, to the Commander, U.S. Army Field Artillery Center and Fort Sill, ATTN: ATZR-DPT-PO, Fort Sill, Oklahoma 73503.

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