# ARMY LOGISTICIAN

NOVEMBER-DECEMBER 1977

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## ABOUT THE COVER

The cover photograph shows a 9th Infantry Division soldier examining a Soviet-made light machinegun, captured from the Viet Cong in Vietnam. The story on page 2, "Captured Enemy Materiel," tells how such items can become logistics assets.

## 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 the subject areas of logistics by providing a forum for publishing and presenting those ideas. The views expressed in the articles in this publication are those of the authors and not necessarily those of the Department of Defense or the Department of the Army.

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# EMPHASIS

**DIVISION TESTS BEGIN AT HOOD**

A three-phase, 3-year series of tests that could lead to restructured divisions is underway at Fort Hood, Texas. The current phase assesses three types of restructured battalions—tank, mechanized infantry, and artillery. The second phase, October-November 1978, will test brigade-size organization and functions. The third phase, slated for April-May 1979, will evaluate the restructuring of a full division. The 1st Cavalry Division is the test unit for all phases. The tests are a result of the Division Restructuring Study, which calls for the Army to be prepared by the early 1980's to integrate modern weapon systems into the force.

**WOMEN OBSERVED IN REFORGER '77**

Army Research Institute observer teams added a new twist to the 1977 Return of Forces to Germany (Reforger) field exercise. They compared the performance of divisional combat support and combat service support sections, squads, and platoons containing all males with those containing both males and females. During war games played for 11 days in September, men and women with similar demographic and personal characteristics also were compared as to deployability and ability to tolerate fatigue and stress. Twelve thousand troops and 37,000 tons of equipment were deployed in Europe in support of NATO training objectives during the annual exercise.

**STUDIES APPROVED, PRIORITIES URGED**

After reviewing 130 logistics study proposals, the Army Logistics Studies Steering Group approved 75 for inclusion in the Army Logistics System Master Plan (LOGMAP). Ten studies unrelated to LOGMAP were approved and 45 studies were withdrawn. At the conclusion of its 2-day meeting, the group recommended development of a system to identify those logistics studies most critical to the support of Army war plans and establishment of priorities for their accomplishment.

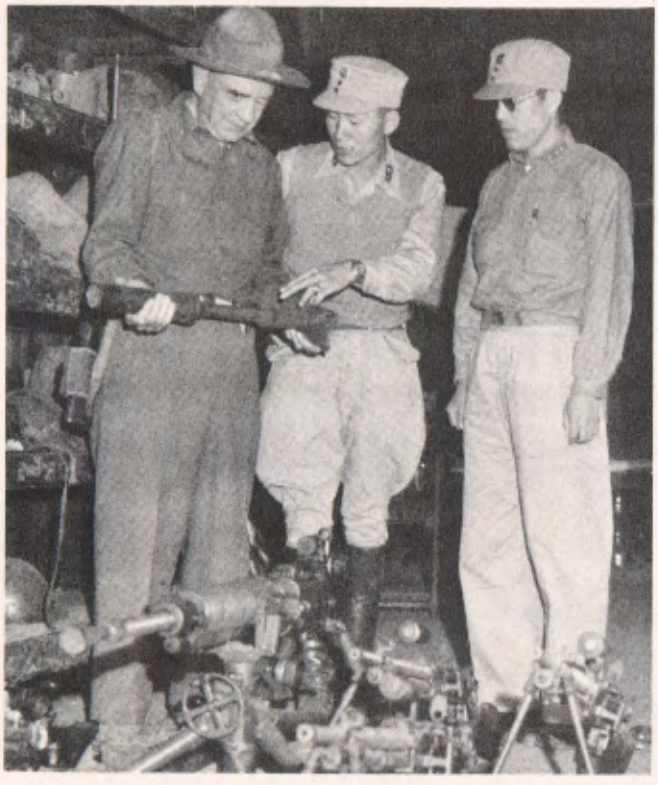
**DARCOM COMPLETES DEPOT CONVERSION**

Most of the electronics maintenance mission at Lexington-Blue Grass Army Depot, Kentucky, has been transferred to Army depots at Sacramento, California, and Tobyhanna, Pennsylvania. These two depots will share maintenance of major electronic systems in areas such as air traffic control, missile defense, and satellite communications while continuing to perform their basic electronics missions. Lexington becomes a depot activity subordinate to Red River Army Depot, Texarkanna, Texas. Depot realinement is now complete under Project CONCISE, a Department of the Army program to realine staff elements and major field commands.

**UTTAS NAMED 'BLACK HAWK'**

The UH-60A utility tactical transport aircraft system (UTTAS), scheduled for first production delivery in August 1978, has been named "Black Hawk." A DARCOM spokesman said it is customary to assign popular names to aircraft before they enter the production stage. The utility aircraft is one of the Army's "Big 5" weapon systems.

*(Continued on page 46)*



☐ 38th Field Artillery Battalion gunners turned 76-millimeter guns against their former owners during the Korean War (top). Captured Japanese knee mortars were carefully examined before use by the Allies in World War II (left). Enemy rice, taken in Cambodia, was transported to Vietnam for use (above).

# A Logistics Asset—
# Captured Enemy Materiel

by Major Frederick E. McCoid

Throughout history, field commanders have used supplies and equipment captured from enemy forces as logistics resources. Often captured supplies and equipment were instrumental in the success of various campaigns. The need to use such materiel resulted primarily from either inadequate supply lines or limited national logistics bases.

In light of today's continuing economic austerity and decreasing resources, the use of captured enemy supplies becomes increasingly important. In times of crisis, needed raw materials may be denied to the United States by source nations for international political reasons. Also, an increase in the intensity or duration of a conflict will increase the need for using captured enemy supplies.

United States Army doctrine for the use of captured materiel is based primarily on lessons learned during World War II. Later conflicts brought added refinements.

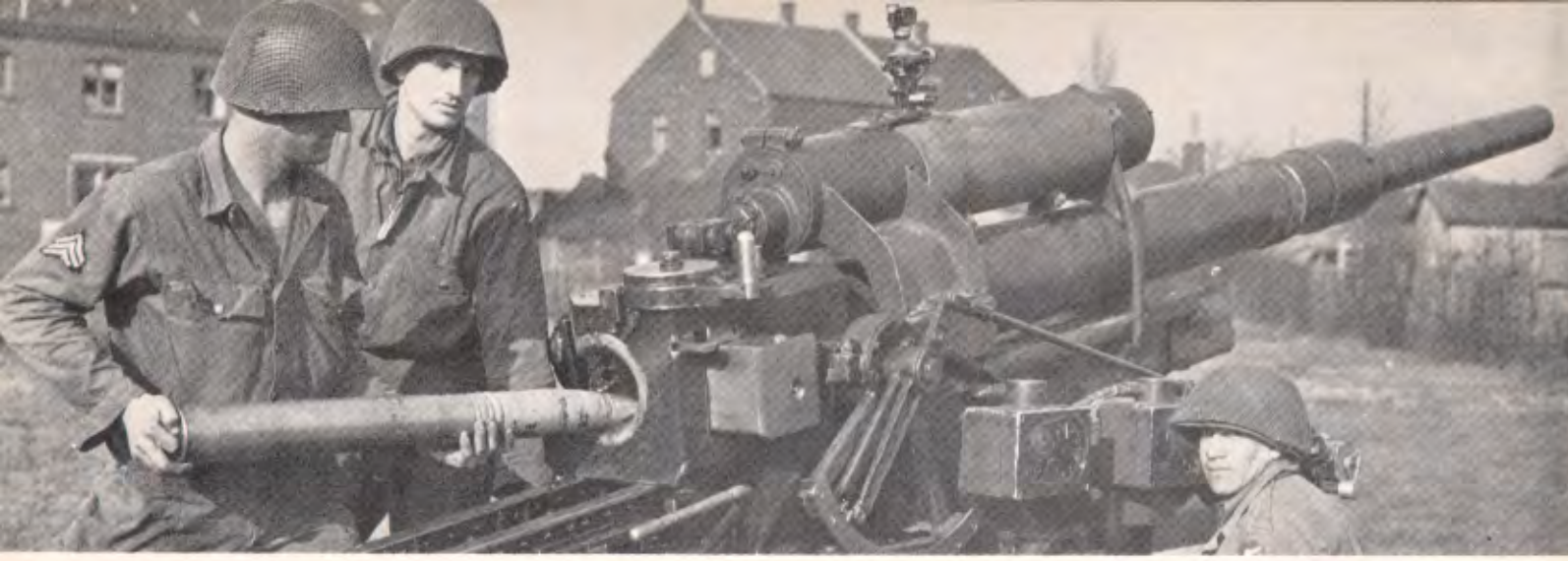
During World War II, both the Allied and Axis forces found the use of captured enemy supplies and equipment to be of extreme value in reducing logistics shortfalls. United States Army unit commanders were charged with the responsibility for protecting and evacuating captured Axis supplies and equipment. Directions included not only evacuating captured materiel for use, but also evacuating salvage for industrial purposes. Technical specialists were assigned in both theaters to determine the use of captured supplies and equipment. They provided literature and other aids for training troops in the maintenance and use of Axis materiel.

The use of captured materiel increased the German war machine extensively, particularly during the forces mobilization from 1939 to 1941.

The Korean and Vietnam Wars saw only limited use of captured enemy supplies and equipment by U.S. forces. Usually such supplies and equipment were destroyed in place because of the lack of an adequate evacuation capability and a minimal need for the assets. When items were evacuated they were often demilitarized, sold as scrap, or disposed of as museum pieces or souvenirs. In both Korea and Vietnam, however, the enemy ingeniously used captured supplies and equipment to sustain their war efforts.

The most recent use of captured supplies and equipment was by Israel. During the 1973 war, Israeli forces were able to make maximum use of captured enemy materiel by incorporating such use into their national mobilization and logistics plans. This included stockpiling assets designed to support a short-term war in a high-intensity, austere environment. Improvisation, motivation, and dedication were required from all military personnel involved in battlefield recovery. Contact teams and forward maintenance facilities made possible the rapid rehabilitation of captured equipment. Standardization and cannibalization were keys to that effort.

Current military policy recognizes that captured materiel has value for technical intelligence; issue to friendly forces; operational purposes in the theater of operations, including local civilian operations; special warfare; internal defense; supplementation or substitution for U.S. materiel, especially for items in short supply; training; research and development; and historical



☐ During the last days of World War II, U.S. artillerymen used a captured German 88-millimeter flak gun to fire upon the Krupp Works in Essen, Germany.

needs. The two areas most involved with captured materiel are intelligence and logistics.

The intelligence community provides guidance on evaluating and analyzing captured enemy materiel. This includes testing the materiel in laboratories to evaluate its capability and reliability.

In the logistics area, current guidance requires that all captured enemy supplies, other than scrap, salvage, or items required for intelligence purposes, be accounted for and clearly marked "Captured Enemy Supplies." It is further prescribed that standard property accounting procedures be used for enemy supplies. However, these supplies are not subject to stockage procedures. The same classifications apply to captured enemy supplies as to comparable U.S. Army supplies. Items of foreign materiel are evacuated to collection points in the same manner as like items of U.S. materiel. For example, subsistence, petroleum, medical, ammunition, and explosive items are evacuated to collection points designed for these items. Maintenance and salvage collection points generally handle classes II, VII, IX, and similar items. Captured materiel should only be evacuated after U.S. materiel has been evacuated, based on relative item value.

Of particular concern to both the intelligence and logistics communities is the need for an effective war trophy policy. Equipment needed for intelligence or logistics purposes must not be kept as souvenirs nor destroyed unnecessarily by the capturing force.

The immediate headquarters of the finding units are responsible for obtaining and providing prompt disposition instructions concerning whether foreign materiel will be evacuated through technical intelligence or logistics channels. They also assist the finding unit in recovering, safeguarding, and evacuating the materiel.

Logistics elements, such as maintenance, medical, ammunition, and supply and service units, are responsible for assisting in recovery and evacuation of materiel and supplying special transportation required to move heavy items (maintenance units only). They also establish and operate collection points, maintain storage location records, and submit reports on the foreign materiel in logistics channels. When these units are required to maintain stock records, they will include foreign as well as U.S. materiel. Logistics staffs at all echelons are responsible for supervising the receiving, storing, reporting, evacuating, and disposing of captured materiel through logistics channels.

These general guidelines have specific applications to each of the classes of supply. Obviously, each class of supply possesses different degrees of use uniquely associated with its individual characteristics. Of course, intelligence exploitation takes precedence over logistics use for all classes of supply, but only so long as intelligence value exists.

Another consideration that applies to all classes of supply is the question of ownership. Ownership should be determined before any item is used. A determination can be made by consulting AR 27-10 and the staff judge advocate. Once title can be vested in U.S. forces, logistics uses can begin.

Subsistence items (class I) are easily identified and usability determined by personnel from preventive medicine units. If found fit for human consumption, their use in the U.S. diet should be considered, but it may be best to issue captured subsistence items to allied forces or in support of civil affairs functions.

Class II captured supplies include individual clothing and equipment, administration and housekeeping items, tentage, tool sets, hand tools, and tool kits. Item identification and serviceability determination can be easily accomplished by supply or maintenance personnel, and no additional training is required to use this equipment. However, taking individual military unforms might violate the provisions of the Geneva and The Hague Conventions and should be coordinated with the staff judge

advocate. These items must also be considered in specific "war trophy" policies.

Captured petroleum, oil, and lubricants (class III) are particularly important resources. Item identification and usability determination are critical before these items can be used because maintenance problems can occur when class III supplies are contaminated or deficient in specific properties. Aviation fuels are particularly critical. Adequately trained personnel with access to laboratories and appropriate technical manuals are required for proper testing.

Class IV supplies can be used immediately as captured resources. Construction materials present no problems in identification or serviceability determination, and no extra training is required to use them. They are particularly important because their quantity, weight, and bulk make them difficult to transport. As a result, they are often in short supply within operational theaters.

Captured enemy ammunition (class V) has only limited application as a logistics resource. Specially trained personnel are required to assist in the evacuation of munitions. Identification and serviceability determinations are difficult, and their usually small quantities and unsafe characteristics limit their use.

Class VI, personal demand items, are usually nonmilitary and have few military applications. They are for individual comfort and personal needs and should be considered as war trophies. However, their nonmilitary nature might create questions of legal ownership. The staff judge advocate should be consulted.

The use of major items, class VII, provides the widest variety and most extensive application of captured materiel as a logistics resource. In addition, these items are among the most complex. Item identification is not difficult, but the determination of serviceability can be. Maintenance and operator personnel require special training. Operational availability of this equipment depends on the availability of repair parts.

Medical supplies and equipment (class VIII) require special consideration when captured because of the humanitarian aspects associated with them. Medical personnel responsible for U.S. class VIII are adequately trained to identify captured medical items and to determine their usability. Once these determinations have been made, the items can be used to fill requirements. The support of prisoners of war should have priority for these supplies, not only because of U. S. responsibility for providing this support but also because of the familiarity that prisoners of war have with these items. Finally, the provisions of the Geneva Convention require that under no circumstances will medical materiel be intentionally destroyed. This leaves the commander in the field with the choice of evacuation or abandonment.

Repair parts (class IX) create difficult problems when captured. Trained personnel are essential for identification and serviceability determination. As a result, the ability of a capturing force to maintain captured equipment in an operational condition is restricted. In addition, an extensive inventory of captured repair parts creates complex management problems. Of course, special preparation and planning during peacetime and programs to standardize captured equipment will reduce these problems. The development of appropriate technical manuals will assist maintenance and using unit personnel in reducing potential problems.

Class X items are those classified for support of civil affairs functions. The general training of military personnel to identify these items or determine their serviceability is probably inadequate. The question of ownership is also a problem with captured civilian-oriented items. As a result, coordination with both the staff judge advocate and civil affairs specialists is essential to determine if and how these captured supplies might be used as a logistics resource. It should be remembered that military applications take priority over civil affairs applications once legal use is determined.

Captured enemy materiel can be of significant value in military operations. The U.S. Army must be able to control and use this materiel when it is needed to extend logistics resources. ALOG

☐ Russian-made arms and POL were captured by RVN forces during the recent Vietnam War.

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# Organizational Effectiveness

Organizational Effectiveness (OE) is a new Army management technique that has nothing to do with tanks, howitzers, or other instruments of war. It is a process designed to enhance mission accomplishment by doing just what its name suggests. Organizational effectiveness is a management tool that commanders can use to strengthen the chain of command, increase individual effectiveness, and improve the quality of life in their units.

The capability for units to use OE is being expanded Army-wide. Earlier this year, Army Chief of Staff General Bernard W. Rogers directed major commands to create 350 OE staff officer positions by the end of 1978 from their existing authorizations for captains, majors, and lieutenant colonels.

By that time, the U.S. Army Materiel Development and Readiness Command plans to have filled 24 of these positions, 11 of which are to be filled by Department of the Army civilian OE staff officers. To date, the command has identified one or two OE staff officer positions in each subordinate major command and three positions at command headquarters. Because of their greater concentration of troops, the Forces Command will fill 90 positions and the Training and Doctrine Command will fill 75 positions.

The Army's OE process involves the use of selected modern management and behavioral science techniques used in the private sector for many years. The Army studied these techniques between 1972 and 1975, when their usefulness to the military was demonstrated in several pilot projects.

The key element in the process is the OE staff officer who is ready upon request to help a commander solve a specific problem or improve the overall ability of the unit to accomplish its mission. The staff officer receives 16 weeks of special skills training at the Organizational Effectiveness Training Center, Fort Ord, California. These skills allow the officer to focus on and diagnose organizational processes such as planning, problem solving, decision making, communications, and teamwork with the objective of helping the organization improve the effectiveness of these processes. About 270 OE staff officers are now being trained annually.

Any commander, supervisor, or manager may request the services of an OE staff officer. It is important to understand that this officer is not used as a unit evaluator or inspector. Rather, the officer provides direct assistance to the requesting commander. Information gathered about how the unit functions and about its internal affairs is held in complete confidence by the OE staff officer and is shared only with the unit commander. Also, the anonymity of individuals who provide information is carefully preserved by OE staff officers at all levels.

Organizational effectiveness uses a logical, four-step approach—assessment, action planning, implementation, and evaluation and followup.

"It sounds simple, but there's more to OE than may be evident on the surface," said Lieutenant Colonel Wayne D. Ploger, of the Department of the Army OE office. "If OE is going to work, you've got to have voluntary chain-of-command involvement every step of the way; it's a commander's process. You also need a well-trained OE staff officer with the technical skills necessary to assist the unit in dealing with specific, mission-related problems."

An OE spokesman in General Roger's office said the process could prove especially helpful to combat service support elements. Several instances of the successful use of OE techniques in solving logistics problems have been documented.

Last year, seven out of every eight soldiers scheduled to leave Fort Carson, Colorado, were delayed because of problems encountered at the post's central issue facility. The facility issues TA-50 items such as sleeping bags, ponchos, and web belts to troops reporting on post, and it accepts or rejects for turn-in these items from troops clearing the post. The issue facility is operated by the 40th Supply and Service Company, 68th Transportation Battalion, 43d Support Group.

If the equipment is damaged, it can't be accepted for turn-in unless the departing soldier can produce a

# — A Comer

**A management process adopted from private industry spreads Army-wide.**

certificate attesting that damage was due to fair wear and tear. In these cases, the central issue facility uses mission funds to replace the equipment. If items are otherwise damaged or lost, the soldier must pay for them.

Colonel Robert W. Pointer, Jr., group commander, sensing user dissatisfaction with how the facility was being operated, requested OE team assistance.

A sergeant sat outside the issue facility and interviewed 320 men and 80 women processing through it. Users expressed satisfaction with issue procedures, but dissatisfaction with turn-in procedures. They suspected that a double standard existed for determining what constituted fair wear and tear. They felt that standards used for turn-in were stricter than those used for issue.

The OE team, along with the group commander, decided to encourage communication between issue and turn-in personnel for the purpose of applying a uniform set of standards to determine what constituted fair wear and tear.

In weekly discussion groups, the standards for measuring fair wear and tear of each piece of TA-50 equipment were reviewed. If an issue-point person issued a piece of equipment that could not be accepted immediately for turn-in, he or she was required to clean or repair the item.

At the same time, the commander sent mobile repair teams to the using units to repair damaged TA-50 field gear without cost to the individual.

As a result of these measures, using units regained confidence in the central issue facility, morale lifted, and the amount of mission funds spent to replace damaged equipment decreased.

The second example took place in Europe before OE became established Army policy. A supply and transport battalion was experiencing a problem with the late delivery of rations, clothing, and petroleum products to divisional units. Organizational effectiveness skills were used to solve the problem.

"Customers were dissatisfied with the service they were getting," recalls the battalion commander. "There was little feeling of accomplishment among members of the battalion's supply and service company. Junior leaders and men waited to be told what to do, how to do it, and cared little about the quality of service."

A 4-month survey of personnel—from ration truck drivers to company commanders—provided a clear picture of attitudes, while candid exchanges of ideas at all levels produced many possible approaches to general supply and ration distribution.

Each soldier's job was redefined to make him or her solely responsible for certain duties, either as an individual or as a member of a team. Soon, a client relationship developed between dining facilities personnel and the ration delivery team serving them.

A "self-service" store replaced formal, impersonal requisition procedures in the warehouse, sparking a proprietary interest in the soldiers who operated it. A supply handler or "box humper" managed his own section and was responsible for cleaning it and for stocking and issuing 200 to 400 items. Evaluations based on customer reaction indicated that the changes improved service.

"The private gets a tremendous boost to self-esteem when he helps a crusty sergeant find an item," the colonel noted.

His 2-year experience with OE led him to conclude that—

- Managed change involves a continuous survey of attitudes, objective results, and commitments.

- Because he influences his superiors and his subordinates alike, the commander is the ultimate manager of change.

According to General Rogers, the real purpose of OE is "to improve the climate, enhance discipline, raise motivation, increase commitment, and improve organizational effectiveness. It requires that we . . . institutionalize OE so that 10 or 15 years from now, those young bucks who come behind us will be saying, 'You mean we haven't always done it this way'?" ALOG

# Making It Work In Europe

by Brigadier General David C. Martin
and Major Lynn W. Kling, Jr.

A mud-spattered M60 tank waits in turret defilade, in a carefully selected ambush position. Its camouflaged hull is almost invisible in the pre-dawn twilight and its engine is silent. The trap is ready for the unsuspecting enemy column about to move through the valley below. The position is excellent, the tactics are sound, and each man, with months of concentrated training behind him, knows exactly what is expected of him during the upcoming action. The only remaining question is whether or not each of the tank's mechanical systems is ready to perform its intended purpose.

In the 8th Infantry Division, the answer to that question is simple. Pathfinder logisticians, in partnership with troops of the maneuver battalions, join forces to insure that when the commanding general concentrates divisional forces for a critical phase of a combat operation he can employ weapon systems confidently, secure in the knowledge that those systems are combat-ready. Anything less than peak readiness sustained throughout the battle is unacceptable on today's lethal battlefield.

The significance of logistics in determining the outcome of battles has seldom been as obvious as it was during the 1967 Mideast war. Although the Israeli Defense Forces were outnumbered in almost every skirmish, they turned to their service support units to

repair "dead" tanks killed by enemy fire. Tanks were revived again and again during 6 days of the war and represented additional combat power. They were a decisive factor in turning the tide of battle in favor of the Israeli Defense Forces.

The Pathfinders have learned from the experiences that led to the success of the Israeli Defense Forces and daily practice techniques that promote a high sense of logistics consciousness. In short, the division makes Army logistics support work in peacetime exactly as it would in the event of war. It recognizes the close relationship between success in combat and the fielding of equipment that is ready for war and can be sustained beyond the initial encounter.

A new support philosophy has emerged based on the assumption that the Army Logistics System is normally responsive, but that problems must be detected early and dealt with vigorously. Division officers feel that logistics management problems usually represent internal system failures that require immediate attention.

Key management indicators found in Army doctrine have been adopted as "vital signs" for monitoring the overall health of logistics systems divisionwide. A modified Materiel Readiness Report, DA Form 2406, which is submitted weekly by all supported units, is summarized and stratified to produce a composite "real-time" picture of the readiness posture in the division. Logistics managers and unit commanders together identify problems as they develop and highlight supply and maintenance shortcomings that would affect combat-essential equipment.

Routine supply actions, too, are put under the microscope to insure that repair parts stockage will be responsive to the revitalized emphasis on combat readiness. Authorized stockage list (ASL) effectiveness trends, measured against DA demand accommodation and demand satisfaction goals, provide a reliable barometer of the ability of division supply support activities to fill customer requisitions. Additionally, zero balances are given close exception management. Authorized stockage list review boards, constituted of both supply and maintenance managers, purify the stockage lists, using current demand criteria coupled with readiness considerations. All of these efforts help to insure that each dollar spent on repair parts pays a dividend in increased combat readiness.

The commanding general has played a dominant role by enunciating a clear set of logistics priorities. Weekly logistics briefings on the division's readiness and supply posture insure him of the opportunity to see an accurate "real-time" profile of unit supply and maintenance problems. He is provided with detailed data and background information from which he gains an insight into areas where his personal emphasis would be most beneficial.

The unifying effect of the division commander's guidance insures a full-fledged logistics effort, both by supported and supporting unit personnel. This effort is focused toward the single goal of sustaining maximum combat power. When, for example, the air line of communication (ALOC) between the continental United States supply base and customers in Europe became a reality in January 1977, the division was able to immediately capitalize on the greatly reduced order and shipping time.

The rapid fill of requisitions submitted to continental United States has accelerated the tempo of receipts and insures an expedited continuous flow of parts to commanders responsible for restoring nonoperational equipment to a combat-ready posture. Not operationally ready supply (NORS) parts arriving from the United States are made immediately available to supported units. As a result, the parts can be installed within hours of the time they are initially received within the supply support activity. Division policy calls for installation of deadline parts when they are received—7 days a week, 24 hours a day. This policy and the reduced order ship time have enhanced the 8th Infantry Division's operational readiness.

Logistics management is a daily function in the division, just as it would be in war, and is performed by a highly energetic division materiel management center. There is no magic in the center. Success of the overall management effort is the result of constant checks on divisionwide systems and procedures that are critical to sustaining maximum combat power.

The center has been singularly effective because of a unique command relationship by which it is empowered to issue operational directives to the subordinate elements of the division support command. This organizational relationship speeds collection and analysis of logistics data and, in effect, provides a direct link between the division support commander, shop officers, and mechanics. This has greatly accelerated the reaction to problems and workload bottlenecks.

Since the efficiency of repair efforts depends largely on the speed with which repair parts can be supplied, special attention is devoted to expeditious supply actions. Parts that are hard to get through normal procedures can be obtained through aggressive manipulation of assets available from within and from units that support the division. The materiel management center

can initiate a comprehensive search for critical parts and frequently directs cross-leveling throughout the division. Lateral transfers coordinated between the center and other units in the corps area further broaden the supply base.

To expedite parts deliveries from the general support wholesale supply system, the center uses an extensive unit pickup system whereby NORS requirements for parts not on hand in division stocks are telephoned to the USAREUR Materiel Management Center. The parts, when released from general support stocks, are picked up using dedicated transportation and are delivered directly to the using unit. As a last resort, when NORS parts are not available in Germany, delivery is frequently expedited through direct telephonic contact between the center and the continental United States supply source.

Along with monitoring repair parts availability and expediting the flow of repair parts into the division, the center has responsibility for managing the authorized property (TOE and TDA) of divisional units. Unit property authorizations and transactions are given the same detailed attention that the maintenance of deadlined equipment is given. The center's unique ability to look at the division as a whole has facilitated its ability to identify and highlight maldistributed equipment, critical shortages, and excess property. Commandwide distribution policies have had the twofold advantage of insuring the most efficient use of on-hand assets and, at the same time, reducing administrative and logistics support requirements associated with the maintenance of excess equipment.

It is obvious that the central role of the division materiel management center is paramount in importance under the 8th Infantry Division's logistics management structure. "Real time" visibility has made the center especially effective in establishing priorities to balance equipment on-hand and equipment serviceability in order to achieve optimum materiel readiness of each divisional element.

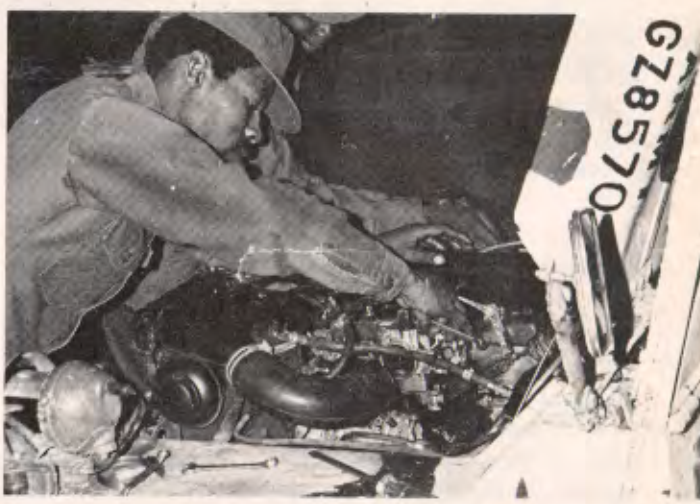
The 1967 Mideast war forcefully demonstrated the advantages of supporting combat equipment far forward in the battle area. Forward support became the conceptual basis upon which the 8th Infantry Division designed logistics procedures to sustain divisional maneuver units during field training exercises as well as in a combat situation.

Consequently, combat and combat service support elements habitually train together, developing a sense of teamwork and mutual confidence in each other and in the logistics support system. In peacetime, as it would be in war, supported and supporting personnel are judged by the ability of each weapon system to perform a designated combat mission. In war, this would equate to survival.

Maintenance contact teams from the division support command are the cornerstone of forward support in the division. They work with the maneuver battalions they will be supporting in combat while these battalions undergo field training. The teams are mobile and are equipped with tools and a selected supply of deadlining repair parts. Radio communication equipment is provided so that requirements for special assistance or for additional repair parts can be called to the team's parent forward support maintenance company.

Located close to the equipment they support, the contact teams provide a new dimension in responsive direct support maintenance capability. Employment of highly skilled direct support mechanics in forward areas has been found to save valuable maintenance downtime not only by facilitating on-the-spot repairs but also by upgrading technical diagnosis of equipment failures and subsequent isolation of valid parts requirements.

A forward support maintenance company is employed in support of each brigade as part of the support command's forward area support team. The maintenance company, located in close proximity to the brigade field trains, is capable of highly responsive backup support to the contact teams. Each forward support company is mobile and has a limited quantity of high demand major assemblies already loaded for rapid displacement. In addition, the forward support company has a mobile authorized stockage list, which is stored and transported in MILVANS. It consists of



☐ Parts for deadlined vehicles are installed as soon as they are received.


☐ Positioning repair parts in brigade rear areas makes rapid repair of deadlined vehicles possible.

approximately 2,000 demand-supported repair parts and direct exchange items that are available to respond to deadlining parts requirements. Pre-positioning of parts and assemblies in the rear of the brigade area has provided a capability to react quickly to parts requirements forward on the battlefield in relatively close proximity to individual deadlined combat vehicles.

As an extension of the forward support concept, Pathfinder logisticians have been involved in an extensive and continuous review of the division authorized stockage list to identify those items to be moved forward in the event of war. Clearly, nice-to-have, nonessential stockage lines, which are unrelated to combat performance of vehicles and weapon systems, are not required.

A combat authorized stockage list has been developed consisting of approximately 5,000 NORS and non-NORS combat essential stockage lines designed to keep equipment fighting. Common stockage items, direct exchange components, and major assemblies were selected for stockage on the basis of simulated combat experience data collected during Army Training and Evaluation Program unit training, tank gunnery exercises, artillery shoots, and Reforger '76. These data were verified against NORS history files and evaluated by experts. Plans call for the eventual pre-loading of combat authorized stockage list stocks to facilitate rapid forward deployment.

Forward support capabilities have enhanced the division's operational readiness posture during exercises. It is division policy not to permit equipment to be deadlined for more than 24 hours during exercises at major training areas. Only aggressive forward support maintenance coupled with the forward deployment of the division's mobile repair parts supply have made this policy viable. The increased ability of the 8th Infantry Division to support field operations using a wartime approach was demonstrated dramatically during Reforger '76 when the division's operational readiness rate actually *increased* during the exercise.

In conclusion, it needs to be emphasized that whether the division is in garrison or in the field, it has found no easy mystique for making the Army Logistics System work. Plain hard work along with the use of effective management techniques have produced positive and measurable results in logistics readiness. The secret has been to quickly identify problem areas and elevate problems to the command level where they can be resolved.

With the full support of the entire chain of command, logistics readiness has become a way of life throughout the division. Pathfinder soldiers are confident in their equipment today and are convinced that the logistics support system can and will respond to their needs in the future. ALOG

*At the time this article was written, Brigadier General David C. Martin was the commander of the division support command. He is now assistant division commander of the 8th Infantry Division and commander of the military community of Mainz, West Germany. He is a graduate of the University of Louisville and holds a master's degree from the University of Toledo.*

*Major Lynn W. Kling, Jr. is currently serving as the chief of the supply management branch in the 8th Infantry Division. Major Kling is a 1976 graduate of the U.S. Army Command and General Staff College.*

# Reserve Equipment Afloat

by Major Barry J. Roller

**The author suggests a concept to improve our transport capability and save time in future contingencies.**

With continuing economic constraints on military expenditures for transportation assets and with potential restrictions on the use of forward staging areas, there is an immediate need to evaluate our capability to transport conventional forces in contingency operations. Although we train and equip a substantial Army organization in the continental United States, the ability to transport this force is an equally important part of the deterrent mission.

Recent political and military events throughout the world have reduced forward refueling and staging bases. We can no longer rely on refueling and staging rights in either the Azores or Turkey during any future operations. It's possible that similar restraints could be imposed by other nations of Western Europe, along with additional constraints on the use of pre-positioned stocks. Changing conditions have also affected the number of bases that are available for support actions in the Pacific, placing additional burdens on transport assets.

There are limits to transporting conventional forces by air on nonstop, long-range missions. The Military Airlift Command's current in-flight refueling capabilities are inadequate to support a major conflict; thus, the number of sorties may be curtailed. Without aerial refueling, payloads are also reduced, which is particularly relevant to the movement of heavy, oversized equipment such as tanks, command vehicles, and self-propelled artillery. One response might be to suggest significant increases in C-5A and C-141 squadrons or possibly to make available converted 747 transports with air refueling assets, but these are costly alternatives.

Military Sealift Command and U.S. merchant marine ships will be relied upon to move the bulk of unit equipment for sustained land operations. Obviously, time and port facility restraints control the use of this transportation mode.

After unit alerting, there would be delays in getting the rolling stock to the installation, loading, moving the equipment to an adequate port, and preparing the equipment for transoceanic shipment. Considering the recent reductions in Department of Defense dry cargo assets, a long delay could also occur in assembling the transport ships. In addition, heavy-lift cranes must be available at the receiving port to offload standard container ships. This requirement could also cause problems.

In the early 1960's forward floating depots were established in the Pacific. Military equipment from the war reserve stocks was loaded on breakbulk ships of the active fleet. Operating out of Subic Bay, these floating depots were used to equip the 25th Infantry Division in field exercises on Okinawa in 1963.

This concept could be adapted to operate from


U.S. Navy Photo

continental United States ports in support of contingency force deployments. Our war reserve stocks contain many types of supplies and equipment. I suggest that selected items be loaded and stored on naval transport ships to upgrade strategic mobility. Oversized items and heavy items could be loaded on ships of the reserve fleet.

The types and proportions of the equipment loaded should be consistent with applicable tables of organization and equipment for divisional armor and artillery battalions. Vehicle communications equipment should be stored separately in a humidity-controlled depot.

Cargo ships that allow over-the-shore loading and unloading should be used. The Military Sealift Command has no tank landing ships (LST's) in active service or in reserve.

The Navy's active fleet contains 20 *Newport* class LST's, 10 with a home port of San Diego and 10 at Little Creek, Virginia. Decommissioned in 1972, three of the seven original *Suffolk County* class LST's remain in the reserve fleet inventory. The *Suffolk County* LST's were launched in the late 1950's, and each can carry 23 medium tanks plus cargo. Three *Terrebonne Parish* class LST's are also in the reserve fleet. Commissioned in the early 1950's, these are smaller and slower than the *Suffolk County* LST's.

There are six World War II LST's of the 511-1152 series in the reserve fleet. These are controlled by the Maritime Administration, but they are available to the Navy in an emergency. Commissioned between 1943 and 1945, these would have a limited value due to their cargo capacity and the time that would be required for refitting.

The *Suffolk County* class LST's are the best ships that could be used for carrying war reserve stocks. Fifty-four M60 series tanks, six 155-millimeter artillery tracks, four M577 command tracks, and five M88 recovery vehicles could be administratively loaded on the three in the reserve fleet with sufficient cargo space remaining for fuel and ammunition.

Readiness of this "Reserve Equipment Afloat" would require extensive interservice coordination. Funds would have to be spent to upgrade the ships to permit operation on a few days notice. Also, the size of the skeleton crews would have to be increased, and complete crews would have to be identified for rapid assignment.

The Army Materiel Development and Readiness Command would continue to exercise responsibility for the equipment and would have to prepare the equipment for transoceanic shipment. Obviously, maintenance would have to be performed more often on equipment stored aboard ship than if it were stored in humidity-controlled depots. Loaded equipment could be moved periodically to various continental United States ports so that Army units could train with the equipment.

The availability of the equipment during contingency operations would substantially increase the combat power of deployed units. If the need to deploy should arise, the ships could be brought to operational status and be moving toward the area in question even before forces in the continental United States are alerted. When alerted, the armor and artillery units would then need to prepare for the air or sea shipment of only the equipment not included in the "Reserve Equipment Afloat." By implementing the accelerated sealift program described in the "Sea Express" study of 1974, the contingency force could rely on follow-up equipment deliveries to supplement the equipment being air-delivered and transported on the LST's.

Required communications equipment could be moved from the depot to the unit being deployed or, if time permits, to the LST's for shipment. One would expect that the air-delivered elements of these battalions would arrive ahead of the ships. Advance parties composed of maintenance and crew personnel could be placed aboard the LST's by long-range helicopters to prepare the equipment for operations before its arrival at the contingency area.

By using just the three *Suffolk County* class LST's in the reserve fleet, one armor battalion with artillery support could be prepared for immediate deployment. The use of other LST's in the reserve fleet could similarly enhance our readiness posture. **ALOG**

*Major Barry J. Roller is the executive officer of the 2/69th Armor Battalion, Fort Benning, Georgia. He is a graduate of the U.S. Military Academy and the Command and General Staff College and holds an advanced degree from Syracuse University.*

# Skilled Employees? ASK ME!

by Colonel John E. Donaldson, USA (Ret.)

An intensive management effort "to put the right person in the right job" has produced unexpected results.

An age-old challenge for managers at all levels is selecting and promoting the best qualified employees to satisfy job vacancies. Putting "round pegs in round holes" is a lot easier said than done and requires a lot more than just some personnel specialist's assessment of the documents contained in an employee's personnel folder. After almost 3 years of duty as a depot commander and a couple of years in the military personnel field, I have concluded that we simply must find a more equitable and objective method of evaluating the abilities and skills of our employees.

As a multimission depot involved in both supply and maintenance operations, our work force at Red River Army Depot is composed of about 30 percent white collar and 70 percent blue collar employees. These employees must have a multitude of skills and abilities to carry out our major missions of receiving, storing, reconditioning, and issuing general supplies and ammunition for the Armed Forces. The diversity of skills is evidenced by the fact that we have some 30 job families, including 113 different series of jobs, in our wage grade field.

Although we have performance evaluations, interest inventories, achievement tests, and many other such tests at our disposal, the majority of these are oriented toward white collar employees rather than blue collar employees. Because of our varied missions and predominance of blue collar workers, it is readily apparent why it's so important that we have an effective method for selecting and promoting the best qualified employees.

Let me explain what we are doing at the Red River Army Depot to resolve the problem of putting the right person in the right job and to upgrade the skill level of our blue collar work force.

During the 1960's Red River took great pride in the slogan "Where Quality People Provide Quality Products for Quality Defense." Through the Vietnam years until well into the 1970's, this slogan was an honest appraisal of how Red River conducted its business. Then slowly the depot began to experience quality problems.

Concerned officials took a hard look at the situation and discovered that, although there were other contributing factors, basically the problem was being caused by a lack of skills within the depot work force. Additional study proved that this lack of skills was partially the result of having phased out an apprentice program that previously had produced skilled employees. This had led to hiring and promoting people who, though qualified on paper, could not in every case perform at the level for which they were hired or promoted.

Then, in December 1974, the Civil Service Commission conducted an inspection and found that the depot was using employee length of experience as a major factor in determining the best qualified applicants for

☐ Performance evaluation is an important part of the Merit Promotion Performance Testing Program.

promotion. The Commission advised the depot that a promotion system should be established that would measure the abilities, skills, and knowledge of applicants without regard to length of experience.

Depot management and union officials put their heads together and came up with a system that not only meets the Commission requirements but is providing skilled employees as well. Hopefully, through the program, the work force will be able to satisfy, beyond a doubt, the materiel readiness requirements of our Army now and in the future.

Officially, the system is called the Merit Promotion Performance Testing Program. However, to be in step with the times, we refer to it by the acronym "ASK ME." This stands for ability, skill, knowledge, merit evaluation.

We're using the system at Red River for the selection of employees in a number of mechanical and related skills, and although we don't claim that it solves all of our ills, it does seem to be working to the satisfaction of everyone.

Just how does the system work? First, candidates are asked to rate themselves on a number of factors that are directly related to their skills. For example, in the case of a mechanic, the applicant would be asked to rate himself on his ability to use and maintain tools such as micrometers and torque wrenches. Applicants scale their ability from low to high—from A to E—with A meaning little or no knowledge of the subject and E meaning the applicant considers himself an expert on the matter.

This self-rating portion of the evaluation is assigned a weight factor of 10 percent in the overall rating. The depot personnel officer says that in many instances this self-rating varies considerably with what is actually demonstrated in the performance portion of the evaluation.

Training and development is also given a 10-percent rating factor. Here the candidate is given credit for courses taken in schools—usually on his own time and with his own money.

Since the Civil Service Commission requires that supervisory appraisals be considered when promoting personnel, all Red River employees up for promotion are rated on 11 different elements ranging from "knowledge to initiative and adaptability." This portion of the evaluation is also given a 10-percent weight factor.

A weight of 35 percent is assigned to the next factor, which is a panel interview. The panel consists of three journeymen mechanics, or welders, or whatever skill is being tested, one of whom has been designated by the union. Each applicant is asked 35 technical questions, some illustrated with slides. For example, the applicant may be asked to distinguish a bilge pump from a fire extinguisher control head and a primer pump. Every panel member votes separately and the applicant gets an average of the scores.

The final portion, performance evaluation, is actual hands-on testing and carries the same weight as the panel interview—35 percent. Performance tests for nine different skills are now in use while more are presently under development.

Following specifications given in the appropriate technical manual, a heavy mobile equipment mechanic applicant is asked to perform certain tasks at four stations in a performance testing center. At the first station the applicant "mics" the crankshaft, "mics" and selects correct bearings, installs bearings and crankshaft, and torques cap bolts on a jeep engine block. At station two the candidate works on the flywheel and crankshaft, and at station three he installs piston rings. At the last station he sets engine timing.

Applicants for other skills undergo similar testings. For example, a body and fender repairer candidate would use a cutting torch to remove a section of metal from a truck body; then, using acetylene welding equipment, he would replace the metal section, grind the weld flush with the surrounding metal, apply plastic body filler, and complete the body rebuilding process.

Results of the ASK ME program have been surpris-


☐ Applicants for heavy mobile equipment mechanic must correctly identify nuts and bolts.

ing. Applicants rated as qualified under the old system are now often rated as best qualified under the new. Others considered as best qualified under the old method actually washed out under this testing program. About 1,100 candidates in various skills have been evaluated under the program. Thus far, approximately 25 percent were rated as best qualified and thus were selected.

The use of "ASK ME" assessment methods also has shown that some employees are working out of classification. Some people have been underemployed in their jobs, while others have held jobs that are overgraded. A frequent complaint has been that supervisors have not worked them in the full scope of their job, that is, at all stations and on all tasks covered by the job description.

One of the major problems in acquiring skilled candidates has been the lack of available training in the trades and crafts needed at the depot within the depot commuting area. There simply are not very many places where a person can learn about electric systems for combat vehicles or many of the other skills peculiar to Army maintenance.

This has been clearly pointed out by "ASK ME." Because of this, arrangements have been made with a local community college to provide after-hour vocational training in the heavy mobile equipment mechanical field. This training, which is being conducted at the depot using Red River facilities, is offered to employees at a reduced cost.

The college has obtained approval from the Texas Education Agency for a 2-year accredited curriculum in heavy equipment mechanics and is now prepared to offer an associate of applied science degree for satisfactory completion of requirements for this newly established educational field.

The program is providing highly skilled employees and is viewed and accepted by the work force as being completely fair. Competing employees learn their own level of competence and are satisfied that the best person was chosen. Another important aspect of the program that everyone appreciates is that there is no element of discrimination involved. Race, sex, religion, or national origin does not come into the picture and is in no way a factor of consideration.

I believe "ASK ME" is a step in the right direction, a pioneer effort, if you will. I have also found that section chiefs who initially opposed the program are now very much for it. They say that now they are definitely getting more skilled workers for their job openings.

We believe that we are measuring merit. Proof of the pudding, of course, will be how well the tanks, trucks, and other items being rebuilt at the depot perform in the field. Those who have been involved in the program at Red River are betting the proof will be there! ALOG

*Colonel John E. Donaldson, USA (Ret.), was commander of Red River Army Depot, Texarkana, Texas, until his recent retirement. He is a graduate of Ohio University and holds a master's degree in human engineering from Ohio State University at Columbus.*

# 1980 Divisions

## —Testing Tomorrow's Combat and Logistics Elements

If the Army decides to restructure its 16 divisions—and that decision could come as early as 1980—the decision will be based largely on the results of tests now underway at Fort Hood, Texas.

The 1st Cavalry Division is the test unit. Under evaluation is a concept, developed by the Training and Doctrine Command in a Division Restructuring Study, of how war will be waged in the next decade. The concept is offered as an alternative to current division organization and doctrine. The tests provide the means to measure performance and cost differentials between the current system and the proposed system.

The early 1980's will see the deployment of new weapon systems that are more expensive, more sophisticated, and deadlier than now exist. They will provide greater firepower with fewer fighters, but they will require logistics support.

Logistics support will be oriented to weapon systems. The traditional combat service support functions of arming, fueling, fixing, and feeding will be performed as far forward as possible.

Substitution of 5-ton trucks for 2½-ton trucks and the addition of two tractor-trailer platoons will provide the capacity to convey greater amounts of ammunition to brigade areas. Armored, tracked ammunition carriers have been added to maneuver companies to permit rearming combat vehicles in their forward positions.

Ammunition to support high tonnage weapons such as artillery pieces and tanks will be moved from corps storage areas to ammunition transfer points located in brigade areas. Multiple ammunition supply points in the division areas are considered essential to reduce the concentration of ammunition and the signature of vehicles at a given point as well as to cope with the high expenditure rates envisioned.

To fuel forward, brigades will be provided with three to five 5,000-gallon tankers by division. Each brigade forward will have three 10,000-gallon bladders; the division support area eight 10,000-gallon bladders. Divisional bulk storage capacity will increase from 1.1 to 1.5 days supply.

The 1973 Israeli war pointed up the need to fix forward, or to perform repairs close to the battle area. Master mechanics who are skilled in all repair tasks of major systems within the battalion to which they are assigned will provide this capability. Armored carriers will give them access to the forward areas.

A field feeding concept will be tested along with the division restructuring test. Under this concept, feeding will be consolidated at battalion level. One hot prepared meal ("B" ration) and two "C" ration meals will be distributed by battalion personnel daily.

The restructured division follows the tactical directions pointed out in FM 100-5, Operations. Battalion and brigade staffs will be realined. A staff officer for operations and intelligence and another for personnel and logistics will replace the S2 and S3 and S1 and S4, respectively.

At the start of the fight, weapon systems have to be manned by full, experienced crews. Studies conclude that almost all of the combat vehicles of the maneuver battalions will have to be replaced during the first days of combat. Procedures have been developed to insure the marriage of crews with these replacement vehicles.

The division support command will also be reorganized. The name of the division materiel management center will be changed to division support operations center to make clear its operating responsibilities in weapon systems oriented maintenance. The operations center weapon systems managers will interface with corresponding general support organizations at corps level and the Direct Logistics Support System at the wholesale level. The medical battalion will be transferred from division to corps level to permit shifting of evacuation assets based on priority. Each battalion will have an organic maintenance company or detachment to perform organizational and limited direct support maintenance. Forward support and heavy maintenance companies of the maintenance battalion will reinforce them in performing battlefield repairs.

In January the Chief of Staff directed that the concept and organization be tested in the field and that an event-oriented program be developed.

The phase I test, now underway, will assess three types of battalions—tank, mechanized infantry, and artillery. The phase II test, scheduled for October-November 1978, will assess brigade size functioning and organization and the internal logistics systems. The phase III test is slated for April-May 1979 and will evaluate the restructuring of a full division, including logistics support, command and control, communications, and echelons-above-division requirements. The Army's final decision is due in 1979 or 1980.

# Forecasting Health Care Logistics

by First Lieutenant
Thomas P. Keating

When a combat support hospital is deployed, an accurate estimate of logistics needs is a must.

Forecasting logistics requirements for a fixed medical treatment facility is a difficult task, to say the least. In a medical department activity or medical center, the logistics officer is responsible for providing responsive supply support for a myriad of medical and nonmedical supply requirements. Invariably, the chief of the logistics division must depend on historical demand data, patient census information, and continuous input from the professional staff to forecast overall logistics requirements.

Unlike those facilities, however, a combat support hospital is not a fixed medical treatment facility. It is capable of being deployed almost anywhere in the world on very short notice to either tactical or disaster environments. In a combat support hospital, the hospital supply officer is responsible for forecasting medical and nonmedical logistics needs in both garrison and deployed states.

Unfortunately, demand data gathered in support of such garrison medical missions as range coverage and field training exercises are of marginal value in forecasting the logistics support required when deployed. A hospital supply officer in a combat support hospital thus faces a difficult challenge in identifying the logistics support required during deployment and then correlating this support to the size and configuration of the deployed hospital.

A combat support hospital under the MUST (medical unit, self-contained, transportable) concept is composed of four functional elements—power pack, expandable shelter, inflatable shelter, and multipurpose shelter. Together, these units provide a health care facility in the combat zone that nearly meets the standards and capabilities prescribed for modern fixed medical treatment facilities.

The components of MUST-equipped hospitals may be combined into a number of different

configurations based upon mission, tactical situation, and patients supported. The components are basically configured in 60-, 100-, 120-, 180-, and 200-bed hospitals. In addition, various ancillary support units can be added, such as a lab, intensive care unit, surgical suites, and field X-ray facilities.

Personnel at the 5th Combat Support Hospital, Fort Bragg, North Carolina, have developed a method of forecasting medical and nonmedical logistics requirements for each of the standard hospital sizes. The unit's chief nurse and chief wardmaster provide medical-related logistics requirements to the hospital supply officer.

Requirements for nonmedical items, such as fuels, rations, ammunition, and logistics support items, are forecast by pertinent staff sections within the hospital. In these cases, past experience and extended historical demand data are the primary forecasting tools used.

Finally, professional "filler" personnel transferred from area medical department activities and medical centers at the time of deployment must be considered in developing overall hospital logistics requirements. The chart on the right displays some logistics requirements for various sizes of hospitals at the time of deployment.

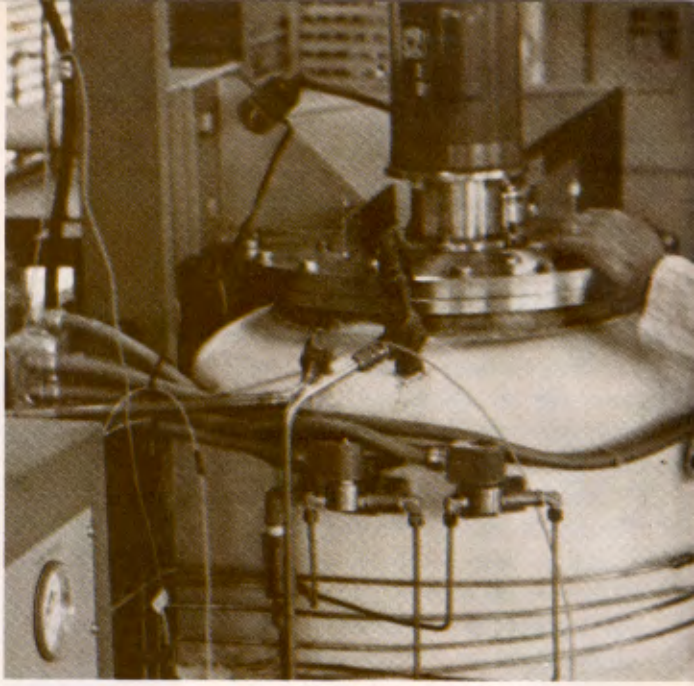
Although this approach is a simple one, this procedure of identifying and forecasting logistics requirements before deployment helps the 5th Combat Support Hospital maintain its readiness posture and insure responsive medical support when deployed. ALOG

*First Lieutenant Thomas P. Keating is a hospital supply officer with the 5th Combat Support Hospital, Fort Bragg, North Carolina. He is a graduate of Cleveland State University and holds a master's degree in business administration from the University of Toledo.*

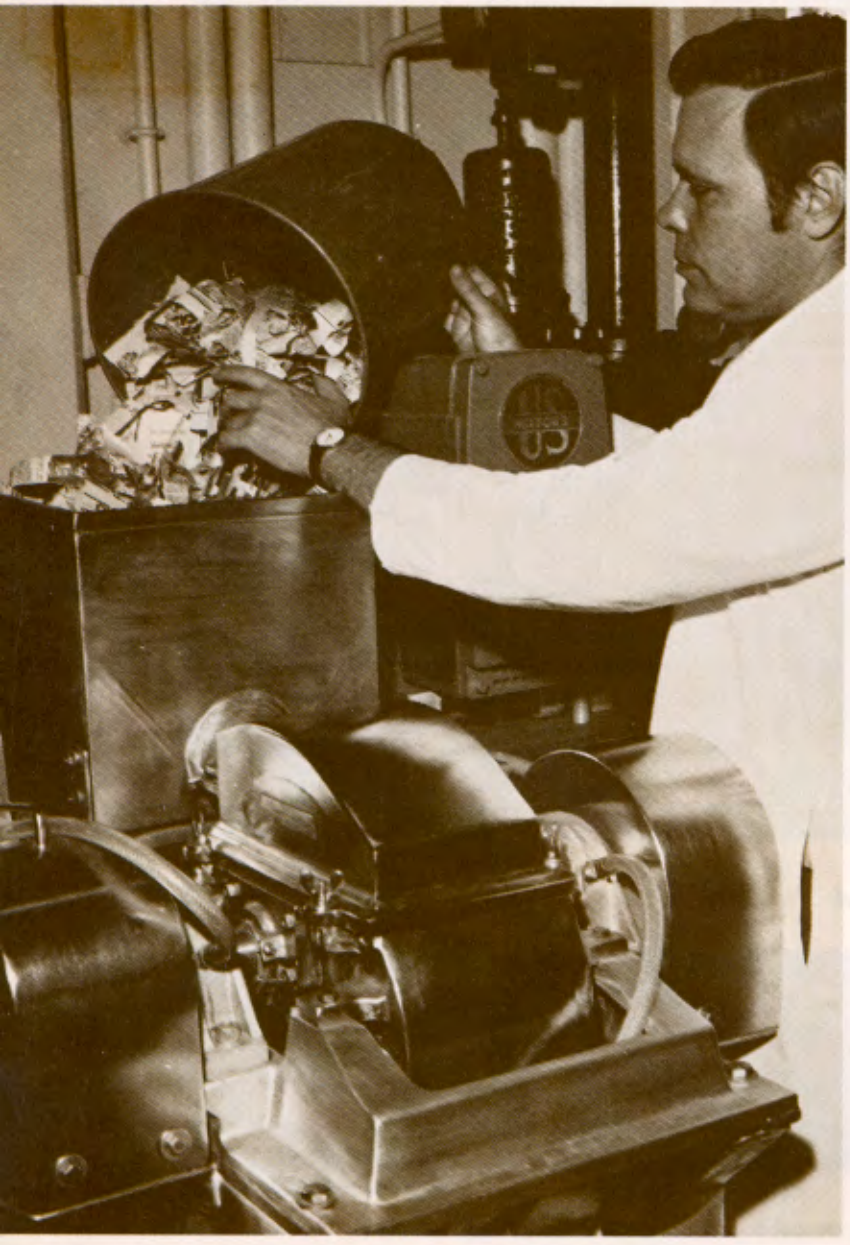
| | Hospital Size (Number of Beds) | | | | | | |
|---|---|---|---|---|---|---|---|
| | 60 | 80 | 100 | 120 | 140 | 180 | 200 |
| Personnel | 175 | 175 | 180 | 180 | 200 | 210 | 236 |
| C-Rations (meals) | 540 | 540 | 560 | 560 | 620 | 650 | 750 |
| Ammo load (rounds) | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Personal property storage boxes | 120 | 120 | 120 | 130 | 130 | 130 | 130 |
| Concertina wire (rolls) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Engineer tape (rolls) | 6 | 6 | 6 | 6 | 8 | 8 | 10 |
| Shower points | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Portalet latrines* | 2 | 2 | 3 | 3 | 4 | 5 | 6 |
| Radio, AN/FRC-93 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Truck, utility, ¼-ton, M151A2, with radio, AN/VRC-47 | 1 | 1 | 1 | 2 | 2 | 2 | 2 |
| Truck, cargo, 2½-ton, M35A2 | 1 | 1 | 1 | 1 | 1 | 2 | 3 |
| Truck, forklift, MLT-6CH | 1 | 1 | 2 | 2 | 2 | 2 | 3 |
| Tractor, bulldozer, D-7 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Semitrailer, 12-ton, M127A1C | 2 | 2 | 3 | 3 | 3 | 3 | 4 |
| Semitrailer, tank, 5,000-gallons, M131A5C | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| MOGAS (gallons) | 100 | 100 | 100 | 200 | 200 | 200 | 200 |
| Diesel (gallons) | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| JP4 (gallons) | 4,000 | 5,000 | 5,000 | 6,000 | 8,000 | 10,000 | 12,000 |
| **Air Force Movements Control Center provides:** | | | | | | | |
| Pallets | 19 | 19 | 21 | 21 | 24 | 24 | 26 |
| Forklifts | 1 | 1 | 1 | 1 | 1 | 2 | 2 |
| K-Loader | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Pintle truck | 1 | 1 | 1 | 1 | 1 | 2 | 2 |

*Garrison field training.

☐ Logistics needs at deployment depend on hospital size.



☐ This machine crushes waste to speed enzyme action.



# Trash Into

Can you imagine beginning your typical day by sweetening your breakfast cereal and coffee with the contents of your wastepaper basket? Then driving yourself to work in your car fueled by grass and tree trimmings, cardboard boxes, and maybe some sawdust? Far out? Yes, but far off, maybe not!

Scientists at the Army's Natick Research and Development Command, Natick, Massachusetts, are working on a process for turning ordinary trash into usable products. The process is to convert cellulose wastes into energy-rich glucose sugar and a host of other food, fuel, and chemical byproducts. At the same time, the process could help solve the growing problem of waste disposal.

A mutant fungus, *Trichoderma viride,* called Tri-Vi for short, is the basis for converting the cellulose. In 1971, the fungus was discovered to be the cause of Army shoes, tents, and other items containing cellulose to deteriorate. Tri-Vi uses its own enzymes to convert anything containing cellulose into food for itself.

Cellulose is the major component in the cell walls of all plant life. Therefore, there is an almost endless supply in grass and tree trimmings, plastic scraps, sawdust, papermill waste, animal waste, wastepaper, cardboard, and similar material.

☐ Fungus is grown in this fermenter to produce enzyme culture fluid.

# Cash

☐ Fluid mixed with waste produces glucose syrup.

Scientists are bombarding the fungus with radioactive elements, creating mutants that put out even more potent enzymes. Through years of experimentation they have hit upon a process that is less expensive and less time-consuming than those tried in the past.

Waste is crushed between two rollers, grinding and compressing the material, breaking down its molecular chain so that the Tri-Vi can act on the cellulose.

Meanwhile the fungus is grown in a fermenter, on powdered cardboard or other cellulose waste, to produce an enzyme culture fluid. The fluid is then mixed with crushed waste to produce a glucose sugar syrup that can be crystallized and purified as sugar. The syrup also makes an excellent base for micro-organisms that can ferment it into ethanol to make ethyl alcohol. One part ethyl alcohol mixed with nine parts gasoline could ease gasoline shortages.

Natick scientists are encouraged that the process may preserve many natural resources. Products ordinarily made from these resources could be made from what we now think of simply as garbage. A few end products that could be created from the conversion of cellulose wastes are—

- Yeast to make single cell proteins for animal feed.
- Glucose syrup refined for use in commercial baking or in intravenous feeding in hospitals.
- *Lignin,* a byproduct of the process, can be burned as a fuel, much like coal.
- Petroleum-based products such as vitamins, polyethylene, acetone, and plastics, can be manufactured through the conversion process, saving the supply of petroleum from depletion.

Natick Research and Development Command has a pilot plant that it is using to establish data on how much the conversion process actually costs and how much refinement the engineering for that process needs. The pilot plant is capable of converting 1,000 pounds of cellulose per month to 500 pounds of glucose. Scientists there believe that the process will be practical and applicable on a large scale by 1980.

If pilot programs prove economically successful, trash may become a top-selling commodity. Landfills and city dumps may be greatly reduced. The world's environment may be cleaner, and fuel and food shortages lessened. Energy may be created and natural resources preserved.

Natick scientists say turning trash into cash may make the world a better place in which to live. ALOG

# Electronics Maintenance by TV

by Walter M. Penny, Jr.

Television technology has come a long way in a short time. Small, portable equipment can now be used to produce high quality TV tapes with both sound and color. Moreover, the equipment is no longer prohibitively expensive, making the television medium available for use by a variety of organizations.

The U.S. Army Communications and Electronics Readiness Command, headquartered at Fort Monmouth, New Jersey, has taken advantage of this technological advance. The command now uses standard ¾-inch color cassette television tapes to supplement its training programs and to promote an exchange of information about maintenance problems in electronics equipment. Eleven television tape recording and playback systems have been sent by the command to logistics assistance offices in the United States, Europe, and Korea. So far, the results of using TV tapes to view maintenance problems have been impressive.

In a trial period, completed in 1975, surplus black and white "porta-packs" were placed in selected logistics assistance offices in the United States and Europe to determine the value of using TV reports in the technical assistance program. Some experiences during this trial period showed that a reporting standard had to be established in order for the maintenance technical assistance problems reported to be completely understood by viewers. The actual operation of the TV equipment is not difficult, but the scenario of the TV tape had to be regulated or else the information reported would not be easily understood.

Consequently, a reporting format was developed for the TV reporters to follow. With this simple format, the problem is demonstrated in a logical sequence showing the technical problem at hand, the probable cause, a schematic or diagram to support the conclusion of probable cause, and a recommendation for solution or further investigation by specialists at the Electronics Command.

To provide a quick review of maintenance problems in a specific geographic area, the TV reports are edited in a complete TV studio at Fort Monmouth. This studio is primarily used to tape selected portions of technical training programs that supplement the live instruction provided by new equipment training teams that go to the field to introduce new equipment and systems. Additionally, the studio is used to record solutions to reported maintenance problems and other

☐ Portable TV equipment is used to record problems.

subjects of specific and general use in the field. For example, a number of reports were received that raised questions about the use, maintenance, and handling of nickel cadmium batteries. In response, a TV tape about the batteries was produced and is now available through the test, measurement, and diagnostic equipment division of the command's national maintenance point.

Experiences reported in handling the TV equipment in the field have been encouraging, and greater use of the equipment is anticipated. The TV tapes have been used successfully in the new equipment training program, and they are expected to be used even more in the future to serve user units that have access to TV playback equipment.

It must be underscored that the TV tapes are used as *supplements* to technical reports concerning maintenance problems in the field, just as they are to supplement the new equipment training program. No attempt will be made to use the TV capability as a substitute for live instruction or written reports. It is, however, a valuable tool that enhances the processes of reporting maintenance problems and providing solutions and proper instruction. ALOG

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☐ Tapes are edited to provide audiovisual reports.

## Fielding the Black Hawk:

# A Logistics Alternative

by Captain Richard R. Walker

The Black Hawk, utility aircraft UH-60A, formerly known as the UTTAS, is a combat assault, squad-carrying helicopter designed to replace the aging UH-1 Iroquois, popularly called the "Huey." The Black Hawk will be employed in assault helicopter, air cavalry, and aeromedical evacuation units in the 1980's. The production deliveries under the initial contract with Sikorsky Division of United Technologies are scheduled to begin in August 1978. The aircraft is powered by two General Electric T700 turboshaft engines, and weighs over 8 tons when loaded with an 11-man squad and a crew of 3.

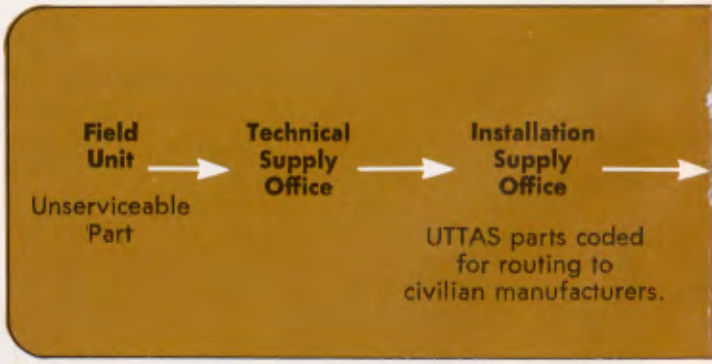
In major complex weapon systems like the Black Hawk, there is an important buildup phase during which the contractor procures the tooling and materials necessary for production and begins the procurement of long leadtime items. Normally, there is a concurrent buildup program by the Government to establish the wholesale supply and depot maintenance support for the new system. These actions are time-consuming when systems such as the Black Hawk are involved.

All of the parts must be assigned national stock numbers and are cataloged in the Army Master Data File. The national inventory control point must prepare to manage all of the items that are new to the supply system. The Army would then arrange for the receipt, storage, and issue of all these parts as soon as they are delivered.

The impact of a system of the size and relative complexity of the Black Hawk easily can be imagined when one considers that it has over 14,000 separate line items of repair parts. Sixty to eighty percent of these are found only in this aircraft and require cataloging action. Tooling and materiel must be procured, depot level maintenance instructions must be prepared, and depot personnel must be trained to manage the logistics support of the new system.

During this initial production phase, the results of the last cycle of tests still are being fed into the design system. The results often produce changes in design which, in turn, change specific parts and subassemblies. The result of this is that soon after fielding the aircraft some new parts must be brought into the system.

These new parts must follow the same stocking pro-



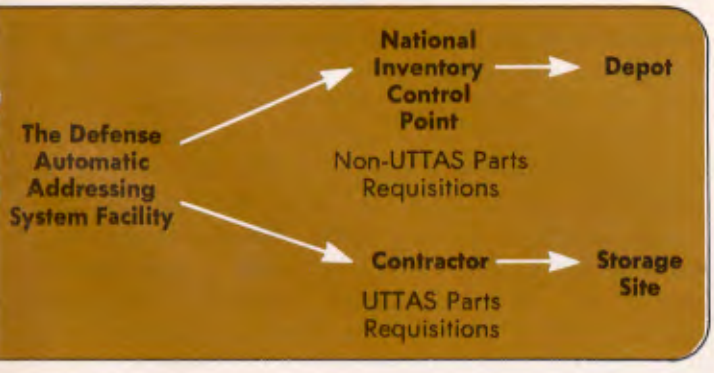

Materiel fielding.

cedures as the ones which they replace. The parts they replace are now obsolete and must be purged from the system. In some cases, the instruction previously given must be updated, manuals must be rewritten, and the catalog must be changed.

A possible alternative was stated by the former Deputy Secretary of Defense David Packard in a 1971 memorandum—

> "It is becoming increasingly evident that we are making decisions to acquire an organic logistic support capability for major weapon systems far too early in the acquisition process. . . . I can see no reason why we can't rely on the contractor for such logistic support prior to design stabilization."

In the case of the Black Hawk, that alternative has been developed and hopefully will serve to cut the initial impact of fielding a major system. It is currently envisioned that the wholesale supply and depot maintenance support for the T700 engine and the Black Hawk airframe will be provided by the contractors. This alternative for fielding Black Hawk parts will continue for the initial 3-year delivery period through March 1981.




The parts will be assigned management control numbers in lieu of national stock numbers. These parts will be managed by the contractor rather than the inventory control point.

The parts will not be entered into the Commodity Command Standard System computer, nor will they be cataloged in the Federal supply system. The contractor will determine requirements from his demand history file. The repair parts will be stored in a Government bond room at the contractor's plant rather than at an Army depot.

What effect will this new system have on the user? The field soldier will probably not notice the difference in the requisitioning process. Repair parts requests will still be processed through the installation supply office. After coding at this level, the Defense Automatic Addressing System will route Black Hawk requisitions to the contractor, who carries out the inventory control functions for this system. Non-Black Hawk requisitions will continue to be routed to the national inventory control point.

Retrograde of unserviceable reparables will follow a similar direct route to the contractor and back to the supply system after depot repair. One effect of the simplified contractor supply and maintenance support is a greatly shortened logistics pipeline. This has enabled the Army to provision for support of the Black Hawk at a much lower cost than other comparable systems. The lower depot stockage level required with this system serves to lessen the number of obsolete parts during the design stabilization period. Similarly, the master data file and Commodity Command Standard Systems are unaffected by design changes since the contractor has the responsibility of maintaining the data base and managing the parts.

The Black Hawk will give the Army a fielded system with a simple, but responsive, support system at a lower program cost than that of traditional support systems. All of this has no negative impact on the user.

Current plans are to convert to a conventional wholesale supply and depot maintenance support system beginning with the fourth year of production. The alternative logistics system allows the contractor to include repair parts costs in his production proposals, as well as his production requirements, resulting in lower unit prices. ALOG

*Captain Richard R. Walker is a logistics officer in the Office of the Black Hawk Project Manager. He holds a master of arts degree in procurement management from Webster College. He has had a wide variety of assignments in logistics and aviation.*

## Third in a series . . .

# A Look at CMF 76

### Performance and potential are essential for promotion.

If you hold a military occupational specialty (MOS) in career management field (CMF) 76, then what follows should be of primary interest to you. This article is a continuation of the series in which the *Army Logistician* looks at the career progression possible in logistics career fields under the Enlisted Personnel Management System.

Although this career field was among the first to be restructured, some additional changes have been made. These are reflected in change 7 to AR 611-201.

The most significant change was the incorporation of CMF 57, field services, into CMF 76 as a subfield. To reflect this change, CMF 76 has been retitled supply and services. As presently structured, the supply and services field contains 11 MOS's, which are further grouped into three subfields—supply, services, and supply general.

There are six MOS's in the supply subfield, covering such functions as procurement, receipt, storage, issue, and administrative control of all classes of supplies, repair parts, and materiel except ammunition, nuclear materials, and petroleum.

In the services subfield, there are four MOS's, each involving a separate area of service. These two subfields merge to form the supply general subfield, which contains only MOS 76Z. Personnel with this MOS have supervisory responsibilities in supply and service operations at skill level 50.

**Supply subfield.** The Quartermaster School, Fort Lee, Virginia, is the proponent school for training in five of the six MOS's in the supply subfield. Responsibility for training in MOS 76J, medical supplyman, is assigned to the Academy of Health Sciences, Fort Sam Houston, Texas. Career progression is possible to the E7 level in the five MOS's for which the Quartermaster School is the proponent. To progress to the E8 and E9 level, personnel must then transfer to MOS 76Z. In the medical supply field, the career progression pattern for MOS 76J goes through 76J50, grade E8. It then joins all the other MOS's in CMF 76 at grade E9 in 76Z50, senior supply sergeant.

MOS 76D, materiel supplyman, is a consolidation of the five former repair parts MOS's 76Q, R, S, T, and U. The primary reason for the consolidation was the low density of positions in each of the commodity specialty areas, the similarity in functions, and the lack of a viable career progression. The soldier in MOS 76D supervises or performs duties involving supply management, receipt, storage, care and preservation, and issue of major end items and repair parts.

The trainee selected for MOS 76D will attend a 12-week resident advanced individual training course at the Quartermaster School, which qualifies him for MOS 76D10. As part of the qualification procedure for pomotion to E5, 76D20, the MOS holder will be furnished nonresident training materials. He will next attend a resident basic technical course at the Quartermaster School to qualify for grade E6 at the 30 skill level. Training for skill level 40 will once more be a form of nonresident training. Before being promoted to E8 and transferred to MOS 76Z50, the 76D40 will attend the 76Z resident senior technical course at the Quartermaster School.

The stock control supplyman, MOS 76P, supervises or performs inventory management functions pertaining to class II, class IV, and packaged class III supplies or performs recordkeeping functions pertaining to the receipt, distribution, and issue of materiel other than ammunition, petroleum, and medical.

MOS 76P10 is awarded upon graduation from the 8-week advanced individual training Stock Control Supplyman Course at the Quartermaster School. At grade E4 the stock control supplyman will be given nonresident training materials in preparation for promotion to E5 and skill level 20.

As an E5, the MOS 76P20 supplyman will attend a resident basic technical course at the Quartermaster School to qualify for E6, MOS 76P30. Training for progression to E7 at the 40 skill level will again be through the use of nonresident training materials. The next time the individual attends formal schooling will be in preparation for entering MOS 76Z at skill level 50. The MOS 76P40 holder will then join with the other MOS's in the MOS 76Z senior technical course.

The storage supplyman, MOS 76V, supervises or performs functions relating to the receipt, storage, issue, segregation, care, preservation, inspection, packing, and shipment of materiel, other than ammunition and bulk petroleum. Duty positions may be in warehousing or in packing and crating operations.

The storage supplyman receives a 6-week advanced individual training course before assignment as 76V10. Before advancing to skill level 20 and grade E5, the storage supplyman must attend a primary technical course at the Quartermaster School. Training for both 30 and 40 skill levels will be by nonresident training. The next resident training for the 76V will be the senior technical course before transfer into MOS 76Z at grade E8.

The subsistence supplyman, MOS 76X, supervises or performs duties involving the receipt, storage, issue, distribution, accountability, sale, and shipment of subsistence supplies. At higher skill levels he may supervise ration distribution or commissary operations. After basic combat training, the subsistence supplyman attends a 6-week individual training course at the Quartermaster School. He will return to Fort Lee for a resident primary technical course to become qualified for skill level 20. The next formal schooling for the subsistence supplyman will be the senior technical course, when he enters MOS 76Z at skill level 50. Preparation for skill levels 30 and 40 will be by nonresident training.

Personnel in MOS 76Y perform unit supply functions, involving the request, receipt, storage, issue, accountability, and preservation of individual, organizational, installation, and expendable supplies and equipment. The MOS 76Y holder may be assigned as unit armorer, performing or supervising the organizational maintenance of small arms and the issue, handling, storage, and security of sensitive items and small arms.

Personnel selected for MOS 76Y may receive advanced individual training at the Army Training Center, Fort Jackson, South Carolina, or at the Quartermaster School. At the present time, training for the unit armorer function is given only at the Quartermaster School. In the future, this function will be taught through on-the-job training, using materials developed by the Quartermaster School.

All MOS 76Y holders will attend a primary technical course at the Quartermaster School to qualify them for duties at skill level 20. Nonresident training will then be provided for skill levels 30 and 40. The MOS 76Y supplyman will only return to the Quartermaster School for the senior technical course when he enters MOS 76Z at skill level 50.

Promotion to the next higher skill level in the supply subfield depends on on-the-job performance, satisfactory scores on the skill qualification test, and training. The first skill qualification tests for MOS's 76D, P, X, and Y are scheduled from October 1977 to March 1978. Soldier's manuals for the MOS's have been printed and distributed. The first 76V skill qualification tests will not be conducted until October 1978 to March 1979; soldier's manuals and comander's manuals will be distributed at least 6 months in advance of this date.

The primary technical and basic technical courses for these MOS's are currently being developed by the Quartermaster School. Present plans call for implementation of the courses in fiscal year 1978.

**Services subfield.** When the former CMF 57, field services, was eliminated, and the CMF 57 MOS's incorporated into the services subfield, several other changes were made. The most significant being that MOS 43E, parachute rigger, which had been in the 00, special assignment career field, was added to the new services subfield. Three of the four services MOS's progress to grade E8, and then personnel must move to MOS 76Z50, senior supply sergeant, for promotion to grade E9. One of the MOS's, MOS 43M, fabric repair specialist, progresses only to grade E7. Personnel will transfer to MOS 57E50, laundry and bath specialist, to be promoted to E8. Promotion to E9 will be in MOS 76Z.

Parachute riggers, MOS 43E, supervise or pack and repair cargo and personnel parachutes and rig equipment and supplies for airdrop. To enter this field, personnel must first be qualified as parachutists. At the higher skill levels, parachute riggers conduct quality assurance technical inspections, inspect and certify rigged loads before and after positioning in aircraft, and perform as safety NCO's in the aircraft and at parachute issue points. They also serve as malfunction NCO's on the drop zone.

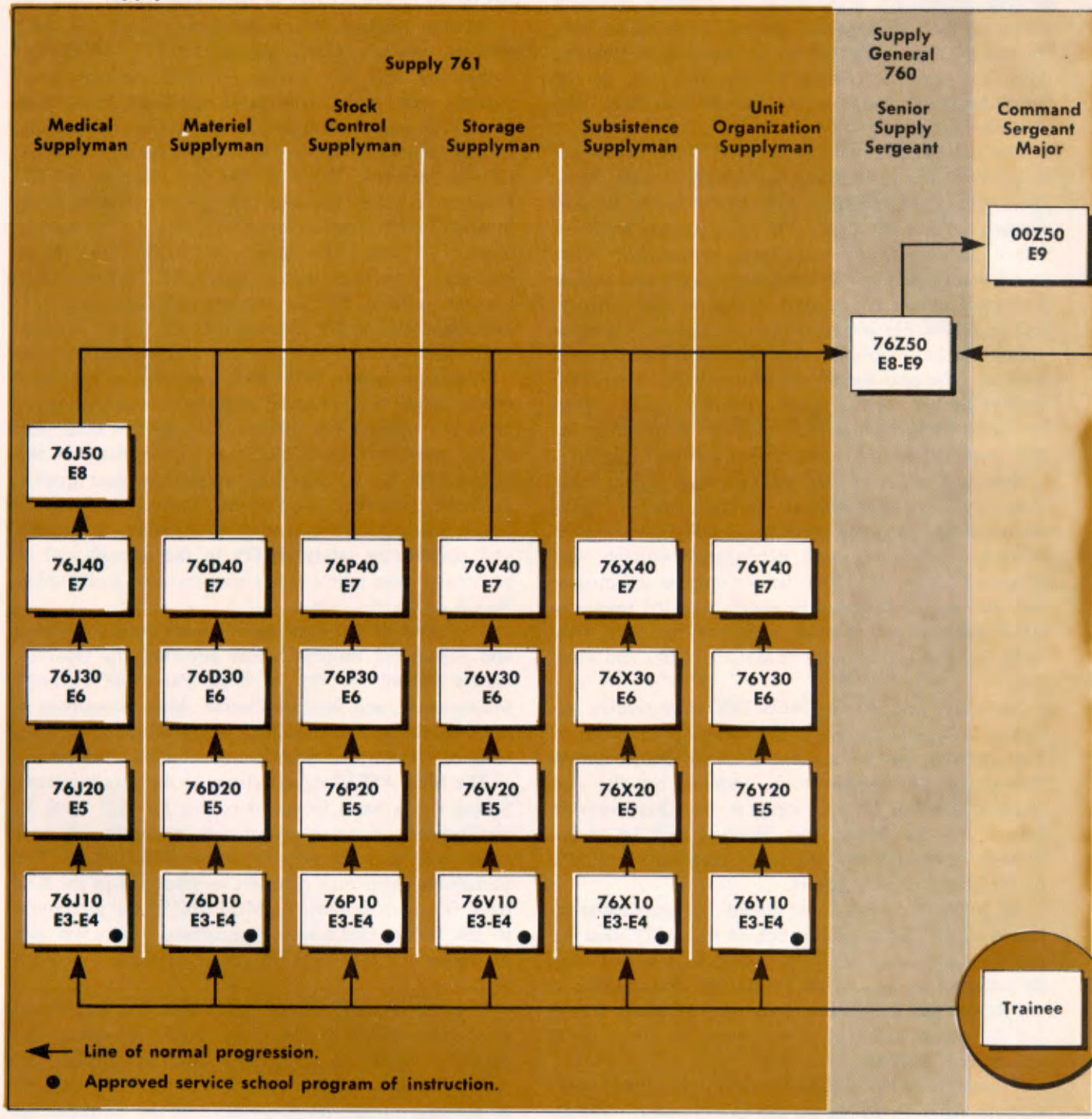
The MOS 43E trainee attends basic combat training and parachutist training before attending the Quartermaster School for the 11-week Parachute Packing, Maintenance, and Airdrop Course. After assignment in the field, the 43E10 parachute rigger will be given nonresident training for qualification at skill level 20.

The MOS 43E20 rigger returns to the Quartermaster School for a basic technical course for skill level 30 qualification. Nonresident training materials are provided once more for preparation for skill level 40. The parachute rigger may progress to grade E8 in the 43E field, but must transfer to MOS 76Z50 for promotion to E9. Before that transfer, parachute riggers will join all others in CMF 76 in the senior technical course for 76Z.

A fabric repair specialist, MOS 43M, was established as a consolidation of the former textile repairman and canvas and webbed equipment repairman MOS's just before EPMS was implemented. The similarity of skills of the two former MOS's motivated the combination. The fabric repair specialist supervises or performs repairs on textile and canvas items, webbed equipment and clothing. The point of decision in the fabric repair specialty is E7. The specialist in MOS 43M40 must transfer to MOS 57E50, laundry and bath specialist, to be promoted to E8.

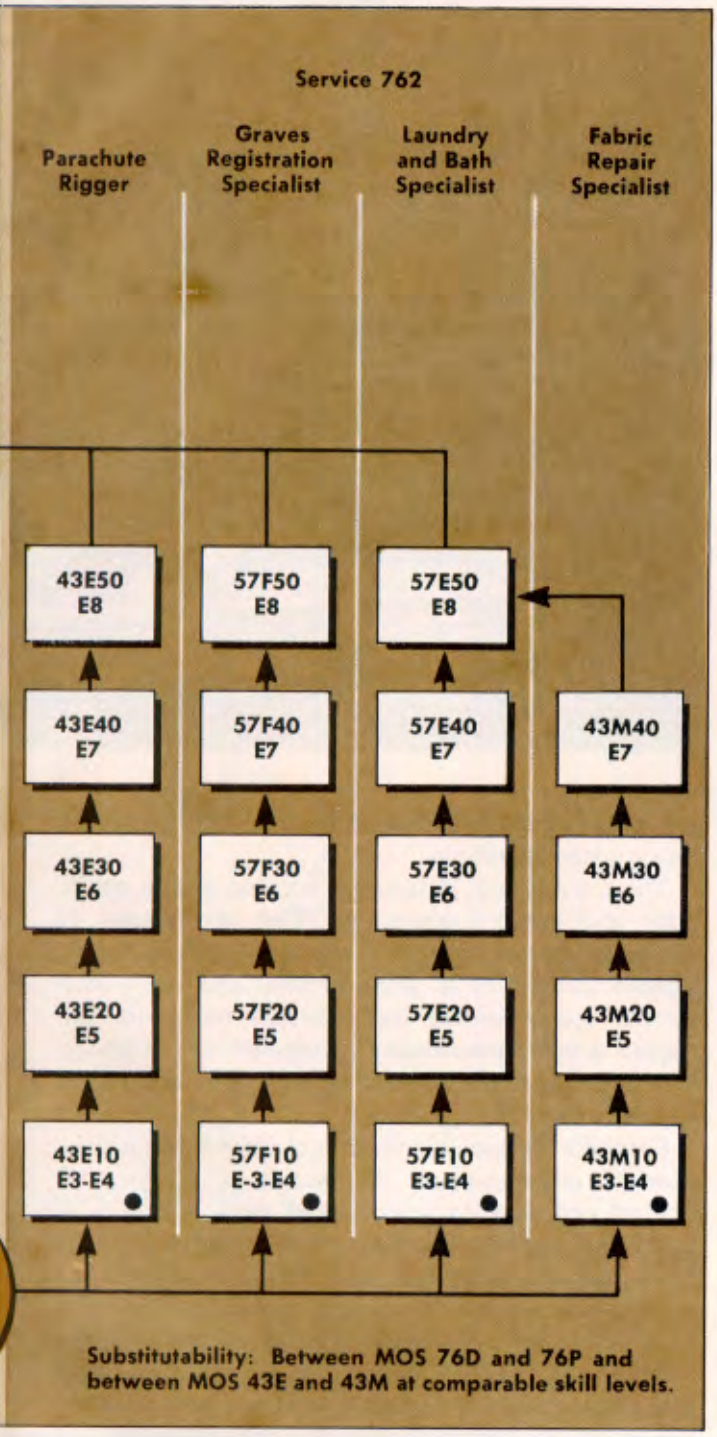
Advanced individual training for MOS 43M is conducted at the Quartermaster School. After graduation

**CMF 76 Supply and Service**




from the course which lasts 7 weeks and 3 days, the MOS 43M10 holder is assigned in the field and is provided nonresident training in advance of promotion to skill level 20.

The fabric repair NCO returns to the Quartermaster School for a basic technical course in advance of progression to skill level 30 and grade E6. Preparation for promotion to skill level 40, grade E7, may be gained through nonresident training. For promotion to E8, the fabric repair NCO moves to MOS 57E50 and then joins all other CMF members in the senior technical course for 76Z50.




The laundry and bath specialist, MOS 57E, supervises or performs laundry, bath, delousing, personnel, and clothing decontamination or reimpregnation functions. At skill level 50, the MOS 57E NCO may serve as the principal NCO in the field service company, laundry and renovation company, or similar unit.

Resident instruction is provided for entry into MOS 57E10 at the Quartermaster School in a 5-week advanced individual training course. A resident primary technical course will also be provided in preparation for assignment at skill level 20 and promotion to E5. Nonresident forms of instruction will qualify the 57E through the 30 and 40 skill levels. Before transfer to MOS 76Z and grade E9, the 57E will attend the senior technical course for 76Z.

The graves registration specialist, MOS 57F, supervises or collects, identifies, evacuates, escorts, and buries deceased personnel. The specialist may also perform escort duties. The training plan for MOS 57F is the same as that for 57E. The 57F attends a 6-week resident advanced individual training course at the Quartermaster School and returns to the school for a primary technical course before promotion to E5. Training will then be given by nonresident methods for preparation for advancement to skill levels 30 and 40. The 57F also joins 76Z at grade E9 and attends the 76Z senior technical course.

Promotion to the next higher skill level will depend on performance on the job, satisfactory scores on the skill qualification test, and training. All four of the services MOS's will be given a skill qualification test for the first time in the October 1978 to March 1979 period. The soldier's manuals for those MOS's will be distributed at least 6 months before that date.

**Supply general subfield.** As previously noted, there is only one MOS, 76Z, senior supply sergeant, in this field. The senior supply sergeant, a skill level 50 MOS, supervises personnel engaged in supply and service operations.

Position assignments may be as first sergeant in a supply and service company; operations sergeant in a supply and service battalion; chief supply sergeant in the logistics staff element of group, brigade, or division artillery or in a division supply office; principal NCO in elements of the corps support command materiel management center and theater army materiel management center; chief materiel management sergeant in a division materiel management center or principal NCO in other supply and services activities.

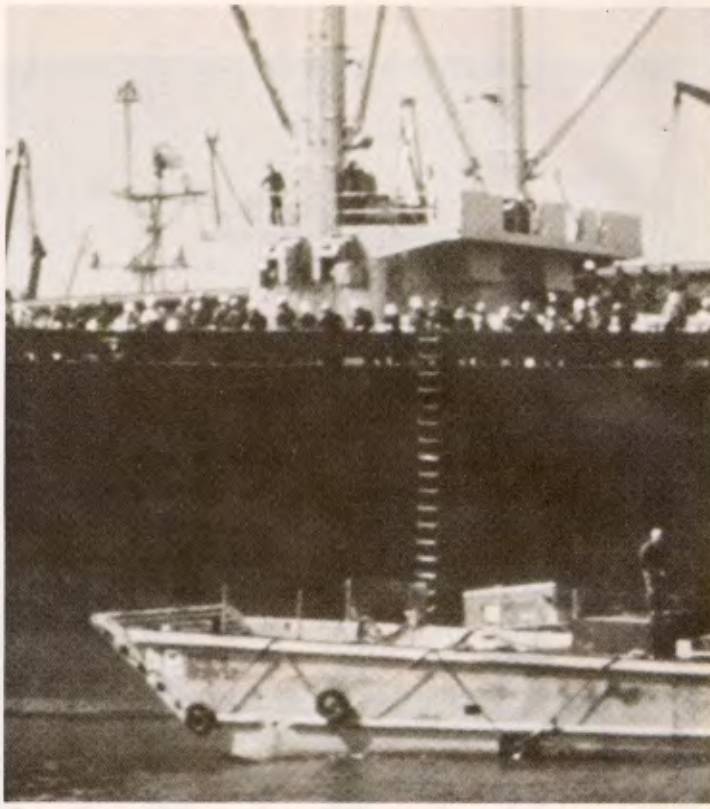
A resident senior technical course at the Quartermaster School, similar to the present Advanced NCOES Supply Course, will qualify all personnel in CMF 76 for 76Z50, E8 and E9. Administration date for the skill qualification test is scheduled for October 1978. It is intended that the 76Z spend his time assisting other soldiers in preparing for their SQT.

This, then, is the picture for career progression in the supply and services career management field. It represents a total training system of resident and nonresident courses and skill qualification tests, each designed to advance your career. ALOG

# Ports Unlimited

by Lieutenant Colonel John J. Vargo, Jr., and Richard H. Goehner

## The reality of logistics-over-the-shore



In peacetime, supplies for Army units around the world are usually distributed through host-nation port facilities. But what happens in times of conflict, when access to these port facilities could be denied by damage or channel blockage?

Obviously, when port facilities are denied, cargo must be moved from ships anchored offshore, across unimproved beaches and marginal terrain areas, to inland distribution points. This type of resupply operation is known as logistics-over-the-shore (LOTS).

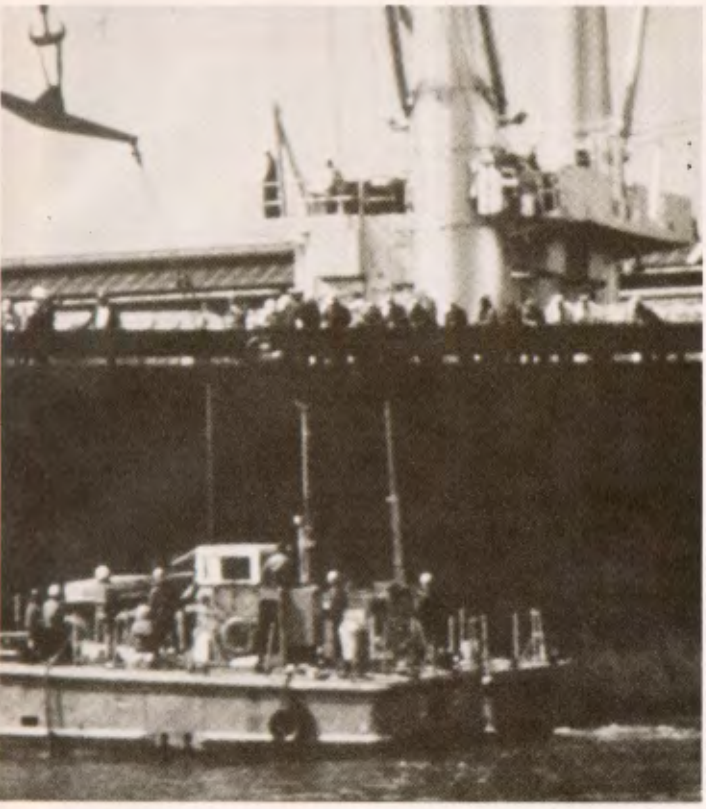
A typical operation includes deploying the LOTS equipment to the selected site, transporting equipment and materiel to the beach, preparing the beach, handling cargo offshore, handling cargo on the beach, transporting cargo over unimproved terrain to marshaling areas, and removing damaged hardware and returnable items. Expanded LOTS missions include augmenting existing ports, transportation for coastal and inland waterway operations, and support of riverine or special military operations.

The two primary missions for which LOTS equipment can be used are logistics and assault. Some people might believe that the Navy is responsible for both missions, but that is not the case. Present statutes and regulations state that the U.S. Navy is responsible for coordinating all activities, including supply requirements, during the amphibious assault phase. After the initial amphibious assault phase, however, each service is responsible for establishing its own logistics system for sustained operations.

There are several distinctions between assault operations and logistics operations. The environment of assault operations is tactical and hostile, while that of logistics operations is administrative and nonhostile. Assault operations are sea-based and temporary and require detailed preplanning to support limited forces. Logistics operations are land-based and sustained and support a theater of operations.

Cargo for an assault landing force provides minimum-essential initial support. It consists of ready-to-roll tracked and wheeled vehicles and small packages of equipment and supplies that are transported in break bulk requiring only light lifts. Cargo moved during logistics operations is for resupply or buildup of already established forces. It consists of large volumes of equipment that is mostly containerized and requires heavy lifts. Watercraft for assault operations are primarily tactical vessels from the amphibious fleet, while logistics watercraft are containerships and resupply vessels from the Military Sealift Command or commercial sources.

Current planning for theater logistics estimates that 95 percent of all daily resupply will be accomplished by surface transport. Dry cargo will make up 60 percent of the daily tonnage, with the remainder in bulk petroleum, oil, and lubricants. Sixty-five percent of the dry cargo will be containerized or unitized, and the rest



will be bulk cargo and vehicles. In addition, 40 percent of all cargo arriving at the theater of operations by surface means will be dispersed through beach terminals.

Because of containerization, shipping productivity has increased and shipping costs have decreased. The number of containerships in the U.S. fleet has increased over 25 times the number available just 10 years ago. Most of the new cargo ships being built are containerships, and new port construction and materials handling equipment is oriented toward containers.

Military units have also been involved in the trend toward containerization. Plans call for increased use of container handling, heavy lift equipment in military operations. The capacity of the proposed rough terrain forklift will be 25 short tons, 5 times that of the current model. Two sideloaders with capacities of 25 and 32 short tons respectively have also been proposed. The current rough terrain crane can lift only 20 tons at a maximum reach of 12 feet. The two container cranes proposed to replace it can lift 150 and 250 tons, or 20 tons at distances of 50 and 90 feet, respectively.

With this equipment, the cargo-handling capability of the terminal service company will greatly increase. The predicted daily capability in a LOTS environment is to discharge or load 300 containers, approximately 3,400 short tons. This compares to the current break-bulk capability to discharge 720 short tons or to load 500 short tons. Of course, the productivity of a container-oriented terminal service company has not yet been demonstrated.

New container-carrying vessels are also being studied to replace current Army watercraft that cannot handle containers. These are shown, with their current counterparts, in the chart below. The LACV-30, an air cushion vehicle, is undergoing tests to determine its suitability. The LCU 1646 is already being procured to replace older landing craft.

The incorporation of the new LOTS equipment into the system is not without its drawbacks. Problems with the deployment of the equipment to the site and preparation of the site have increased the time to achieve full productivity of a containerized operation by more than 10 times that required for break-bulk operations.

Science and technology objectives, legal requirements, and the 1973 transhydro craft study indicate a need for logistics-over-the-shore capabilities. The science and technology objectives identify the need for LOTS capability in a predominantly outsized, containerized logis-

| Present Craft | Break-bulk Capacity (tons) | Container Capacity | Replacement Craft | Container Capacity |
|---|---|---|---|---|
| **LARC-XV** | **15** | **1 (if 15 tons)** | **LACV-30** | **2-4** |
| **LARC-LX** | **60** | **1** | **60-ton Amphibian** | **4** |
| **LCM-8** | **60** | **1** | **LCM-8** | **1** |
| **LCU 1466** | **180** | **4-5** | **LCU 1646** | **4** |
| **BDL Mark I** | **600** | **52** | **336-ton Lighter** | **20** |

Container capacities of present and future Army watercraft.

| Present Craft 1975 | Transition Craft 1975-1980 | Preferred Craft 1980-1985 |
|---|---|---|
| **Amphibians** | | |
| LARC-XV | LACV-30 | LACV-30 |
| LARC-LX | LARC-XV | 60-ton Amphibian |
| | LARC-LX | |
| **Landing Craft** | | |
| LCM-8 | LCM-8 | LCM-8 |
| LCU 1466 Class | LCU 1466 Class | |
| LCU 1646 Class | LCU 1646 Class | LCU 1646 Class |
| BDL Mark I | BDL Mark I | 336-ton Lighter |
| **Coastal, Harbor, and Inland Waterway Craft** | | |
| Small Tug (8 types) | Small Tug (8 types) | Small Tug (1 type) |
| Large Tug (5 types) | Large Tug (8 types) | Large Tug (1 type) |
| Conventional Barge (20 types) | Conventional Barge (20 types) | Conventional Barge (1 type) |
| Sectionalized Barge (3 types) | Sectionalized Barge (3 types) | Sectionalized Barge (1 type) |
| Picket Boat, J (15 types) | Picket Boat (15 types) | Harbor Service Boat (1 type) |
| Picket Boat, Q (4 types) | | |
| Pass and Cargo Boat, T (13 types) | | |
| Freight and Supply Ship (10 types) | Freight and Supply Ship (10 types) | 336-ton Lighter (1 type) |

☐ Transhydro craft study hardware objectives.

tics environment. Legal requirements for oil and sanitation pollution abatement and new communication, navigation, and electronics equipment have also been identified. The transhydro craft study defines the specific operational capabilities and programs that require the replacement of Army watercraft.

Only 2 of the 11 projects identified in the transhydro craft study have been approved—the 30-ton amphibian and the rough terrain front loader. The rest are still being studied.

The specific hardware objectives of the transhydro craft study are summarized in the chart above. Not included are the loaders and cranes previously discussed. Some of the craft are advanced, standardized versions of their predecessors. As can be seen from the chart, the number of different types of the same craft will be greatly reduced within the decade.

The transition fleet would be achieved by modernizing some of the existing craft and developing and procuring selected new craft. Incorporating the preferred craft into the fleet will provide a capability for handling containerized cargo in over-the-shore operations, minimizing the proliferation of several types of the same craft, and reducing the possibility of having an obsolete or nonoperational fleet of watercraft.

Offshore discharge of containerships, the joint LOTS operational test plans, and other studies and tests have addressed some LOTS areas not covered in the transhydro craft study. The offshore discharge of containerships studies addressed discharge facilities, shore-side cargo handling capability, and beach site preparation. The joint logistics-over-the-shore test objectives are to verify the capability to offload ships both in port and offshore and to determine the capability to deploy LOTS equipment to an operational site and establish a logistics distribution system.

Floating cranes and floating machine shops have not been addressed by any of the studies. If determined to be necessary, this equipment should have the capability to handle and repair the new craft and equipment being procured for the containerized era.

Logistics-over-the-shore operations are a fundamental part of the Army's effort to support its fighting forces. The capability to perform these operations must be insured for the future. ALOG

*Lieutenant Colonel John J. Vargo, Jr., is the research and development coordinator for the Marine and Bridge Laboratory, and Richard H. Goehner is an electronics engineer in the Systems Office, Mobility Equipment Research and Development Command, Fort Belvoir, Virginia.*

# Supply Company 'Shootout'

by Captain John R. Forster

## To set the record straight, 'Best in West' responds to 'First in East'


Fort Lewis, Washington, was struck by a surprise epidemic of exophthalmos (abnormal protrusion of the eyeball) as a result of an article that appeared in the May-June 1977 issue of *Army Logistician*. A page 40 article entitled "Soldiers Stepping into Civilian Shoes at Bragg-Pope Supply Point" described Fort Bragg's 403d Transportation Company as the "only FORSCOM supply company in CONUS" operating a central receiving point, ordinarily a civilian function.

To set the record straight, the 295th Supply Company, part of the 80th Ordnance Battalion, 593d Support Group, has been performing this same function since 1974 as one of its missions at Fort Lewis in the Great Pacific Northwest.

A platoon of 34 men and women operates the installation central receiving point, a function normally handled entirely by civilians. Excluding ammunition, bulk fuel, most medical supplies, and rations, all freight is processed by this hard working band. In 1976 they received and processed over $31 million worth of supplies.

This warehouse platoon not only runs the central receiving point but also issues these incoming supplies to the division issue point for 9th Infantry Division units, or issues them directly to the nondivisional units. In addition, this platoon assists the installation supply division by shipping all supplies moving from Fort Lewis to other installations.

The central receiving point is only one of three Fort Lewis missions performed by the 295th Supply Company. A second general supply platoon is responsible for the functioning of the Fort Lewis central issue facility to include issue, receipt, storage, requisition, and proper accountability of all class II clothing and equipment. On 1 January 1977, this property had a value of $2,378,818, and in 1976 the 50-member platoon handled over 11,000 issues and 6,300 turn-ins of TA 50-900 equipment for Fort Lewis soldiers.

Another class II responsibility is to support the Reserve Officers' Training Corps (ROTC) program by supplying personnel to augment the issue, turn-in, and control of equipment for the annual ROTC region IV advanced Summer training camp.

The company is involved in class I activities through a platoon that assists in the operation of the Fort Lewis-Maxi-Mart Store, the dry ration warehouse of the troop issue facility. In addition, the platoon provides mobile refrigerated food support through a fleet of seventeen-7½-ton refrigeration vans. These vehicles and class I platoon drivers are constantly on the move, providing support not only for 9th Infantry Division and Fort Lewis units but for Army National Guard and Reserve unit training throughout the Western United States.

The 214-member company is completed by headquarters and equipment platoons that provide administrative, operational, and logistics support to include maintenance on 84 vehicles and major pieces of equipment, to enable the other three platoons to effectively accomplish their missions.

With all these tasks, it is evident that the 295th Supply Company carries a considerable load in the operation of Fort Lewis. From the company that makes supply "Best in the West," our hopes for success are extended to a transportation company at Fort Bragg, North Carolina, which is learning that supply is the backbone of the Army's existence. ALOG

*Captain John R. Forster commands the 295th Supply Company at Fort Lewis, Washington.*

# Rules to Lead By

*by Colonel Fred E. Elam*

*"A competent leader can get efficient service from poor troops, while on the contrary an incapable leader can demoralize the best of troops."*

*—General of the Armies John J. Pershing*

Command of a combat service support unit—be it a platoon, company, or battalion—is a professionally challenging and personally satisfying assignment. As you approach this superb leadership opportunity you will—as most of us who have preceded you—be filled with a mixture of pride and trepidation; pride at having been selected for command and trepidation in wondering whether or not you will measure up. While not purporting to outline a guaranteed formula for success, the intent of this article is to offer a few observations (certainly not original) relating not only to command of combat service support units but to leadership traits in general. These observations or techniques are grouped under a broad heading that I call *Rules to Lead By*.

At this point in your career you have served under one or more commanders, each of whom employed a wide range of leadership techniques as he went about his duties as a commander. You undoubtedly, having observed these commanders, have developed your own leadership techniques or style as you have progressed in your career. Regardless of your own leadership style, there are some observations that, when added to the traditional principles of leadership, can stand you in good stead as a commander of a combat service support unit or as an effective leader in other leadership positions. While you may wish to add your own, here are my seven rules—

- Be yourself.
- Treat time as a resource.

*Be yourself.*

*Treat time as a resource.*

- Understand that you are not the only member of the unit who wants it to succeed.
- Recognize that just because you order something done doesn't necessarily mean that it will be done.
- Beware of self-fulfilling prophecies.
- Remember that your contemporary commanders are important to your own success.
- Sell your unit.

The single-most important advice you can be given upon assuming command is, *be yourself*. Your very selection for command is indicative of the fact that your unique qualifications have been judged by your commander or an impartial board of officers as constituting those qualities that contribute to success in command. Thus, when you assume command, continue with the leadership techniques that have successfully brought you to your command. Do not attempt to become someone you are not. Keep in mind—anyone who tries to be something to everyone is nothing to anyone.

The attitude that you bring with you to your new command is vitally important for it will permeate your entire command. Be confident in your own abilities, yet recognize the need to learn from each new leadership experience. If you refuse to make a decision until you are absolutely certain of the signals emanating from "on high," that attitude will be reflected in a conservative outlook and a lack of initiative on the part of your subordinates. Your attitude toward your command is a critical factor in motivating your subordinates. A confident attitude on the part of the commander creates confidence in members of the unit that they can achieve the goals that have been established for them.

As a commander, you will be given a combination of resources—men, money, materiel, and one other, time. *Treat time as a resource.* Although the first three resources are renewable, time is not. Time, both yours as a commander and that allocated to your troops for the attainment of the objectives you have established for them, must be managed just as carefully as the men, money, and materiel. Set aside a period of time each day to get out of your office and discover for yourself what is going on in your command. In addition, set aside a period of time each week (perhaps on the weekend) to reflect on what has gone well and what has gone poorly. Through this "inspect-reflect" technique you can assess trends, measure progress toward objectives, and, if necessary, revise your implementation program.

Don't waste your troops' time. Nothing is more frustrating to your noncommissioned officers and enlisted men than "hurry-up-and-wait" situations, or the assignment of tasks without adequate time to accomplish them. Good planning on your part will reduce or eliminate the troops' frustration of having to wait on you for additional guidance or having to "crash" to complete tasks on an arbitrary time schedule. A good rule to follow is—"NCO's accomplish missions; officers plan and direct missions." This will permit the NCO's

*Understand that you are not the only member of the unit who wants it to succeed.*

who are closest to the troops and to the mission to plan the time accordingly. This will reduce, if not eliminate, wasted time of your troops and ensure that adequate time has been planned to accomplish assigned tasks. Wasting the troops' time is a sure prescription for low morale in any unit.

As you assume command of your unit and throughout your tenure as its commander, *understand that you are not the only member of the unit who wants it to succeed.* Good soldiers from private on up want to belong to a unit that consistently accomplishes its mission. They want to be part of a successful organization and will do their best to contribute to that end. Your job is to direct their energies toward common goals. It is also your job to identify those few soldiers who are a detriment to the successful accomplishment of your mission and to recommend their removal. By understanding that the members of your unit want it to succeed, you will find that the majority of your soldiers will try to live up to your expectations. Your confidence in them will be contagious. But if you exhibit an expectation that your soldiers will not succeed, they are also very likely to meet that expectation. In short, what you expect of your subordinates is, in fact, what they will tend to do.

Someone once said that leadership is 10 percent planning and directing and 90 percent implementing and following up. This gives rise to the next observation. *Recognize that just because you order something done doesn't necessarily mean that it will be done.* This is not to say that subordinates will deliberately sabotage your efforts, but there is often a great "distance" between you, as the commander, and the private first class who must execute your orders. As one communications theorist said, "Meanings are in people—not in words." Well-meaning officers and noncommissioned officers in the unit will interpret your orders in terms of their own capabilities, limitations, and experience. You must, therefore, try to strike a balance between overly specific orders that take away all initiative on the part of subordinates and overly general orders that fail to communicate clearly the mission you expect to be accomplished.

*Recognize that just because you order something done doesn't necessarily mean that it will be done.*

*Beware of self-fulfilling prophecies.*

The earlier precept that you, as the unit commander, are not the only member of the unit who wants to see it succeed and that your expectations are a vital influence on your unit's success leads to the next point—*Beware of self-fulfilling prophecies.* With respect to combat service support units, repeating a few familiar quotes will illustrate the danger of putting stock in stereotyped beliefs—

- Mess stewards are always overweight.
- Airborne units have more esprit-de-corps than nonairborne units.
- Individuals assigned to combat service support units are never in good physical condition.
- Truck drivers can't march.
- Female soldiers can't live in the field.

From these examples you can see that some self-fulfilling prophecies would have a positive impact on a unit's esprit-de-corps, as in airborne units, while others would have a negative impact on unit morale, as in transportation units. Beware of the self-fulfilling prophecies that have a negative impact on your unit. When you command a combat service support unit, remember that your E2's and E3's are no different from their infantry, armor, or artillery counterparts. They can, and should, be required to maintain the same standards of appearance and physical condition as their fellow soldiers in the combat arms. They will do this unless you fall victim to one or more of the negative self-fulfilling prophecies.

A unit does not operate in a vacuum. Even though you may command a combat service support unit, the unit requires a large amount of external support in order to accomplish its mission. While I won't bore you with a discourse on the importance of your commander or rater, don't overlook the importance of your counterparts. *Remember that your contemporary commanders are important to your own success.* On almost a daily basis other commanders are in a position to assist you and you will be in a position to reciprocate. Such assistance can range from the loan of personnel for assistance in training to the exchange of ideas on how best to accomplish a mission assigned by a higher headquarters. In short, you need them and they need you. Cooperation does not exclude competition between and among units. In fact, it creates healthier competition than would otherwise be possible if the commanders concerned were not cooperating with each other in a positive manner.


*Sell your unit.*

A final rule to lead by is *sell your unit.* Most of us do "sell" our units without even thinking about it. We welcome newly assigned officer and enlisted personnel to the "best" unit in the organization, and we brag about the accomplishments of our unit to anyone who will listen. Selling your unit can extend to volunteering it for tests, experiments, or exercises that contribute to personnel training. Your unit is then viewed as a can-do outfit by superiors, by contemporaries and, more importantly, by the soldiers of your unit themselves. Whenever possible, include your subordinate leaders in the planning process before volunteering your unit. To do otherwise risks giving the appearance of selling yourself rather than your unit.

In summary, *Rules to Lead By* are intended to complement and not substitute for the leadership techniques that you now possess. I believe that the *Rules to Lead By* will serve you well in almost any leadership situation. ALOG

*Remember that your contemporary commanders are important to your own success.*

*Colonel Fred E. Elam is a student at the Naval War College, Newport, Rhode Island. He formerly commanded the 29th Transportation Battalion (Motor Transport), Fort Campbell, Kentucky. He is a graduate of the University of Arkansas and holds a master's degree in business administration from Michigan State University.*

# A LOG DIGEST

## 'SKUNKWORKS' OFFERS PROMPT TROUBLESHOOTING FOR MISSILES, RADAR

Quick response is the trademark of a team of technicians and designers from the U.S. Army Missile Research and Development Command's (MIRADCOM) "Skunkworks," Redstone Arsenal, Alabama.

This team was organized in May to provide a troubleshooting service for missile, rocket, and radar systems that avoids the usual red tape accompanying systems maintenance. It can work at the missile site or at the arsenal, where it may draw on all of the command's engineering talent for help in repair work.

In addition, the team will be designing new hardware or improving existing hardware for units throughout the world. It may develop anything from microcircuits to entire weapon system prototypes.

☐ Hungry troops take a break from combat-simulated field operations at Fort McCoy, Wisconsin, to enjoy hot chow served up by members of the 103d Support Brigade, U.S. Army Reserves, Des Moines, Iowa. During the brigade's annal 2-week encampment at Fort McCoy, it operates the major logistics control headquarters. It provides food, laundry and shower facilities, fuel, transportation, equipment maintenance, and clothing repair for Reservists and Active Army personnel.

## ARMY TO TEST YEAR-ROUND UNIFORM FABRICS IN JUNE

A 12-month test of three lightweight, year-round fabrics is scheduled to begin next June as a part of the Army's search for a uniform fabric that will provide the greatest comfort and the smartest appearance to soldiers who wear the Army green uniform.

By replacing the four basic fabrics and weights of the present uniform with one year-round fabric and weight, the Army also believes it can substantially reduce expenses. Year-round use means the soldier can obtain longer life from each garment and save money for himself. According to a spokesman for the Army Uniform Board, a $10-per-man clothing allowance cut could save the Army (and the taxpayer) $4 million of the $116 million spent annually on Active Army clothing allowances.

The current Army green uniform became mandatory attire in the early 1960's. It is issued in two summer fabrics—a 10-ounce 55/45 polyester wool tropical worsted for men, and a 10-ounce 55/45 polyester wool gabardine pants suit for women—and in two winter weights—a 15-ounce wool serge for men, and a 12-ounce wool serge for women.

Two of the three test fabrics are similar to fabrics that have been on the civilian market for several years. One fabric is an 11-ounce 55/45 polyester wool serge made of spun yarns. Another is an 11-ounce 75/25 polyester wool serge made of texturized and spun yarns. The third is a 12-ounce all polyester serge made of texturized yarns. All three will be tested for shade (color) control, wrinkle resistance and recovery, durability, and appearance.

For the test, 500 men's and 500 women's uniforms will be cut from each fabric. One-fifth of the women's uniforms will be pants suits.

Primary test sites are Forts Monroe, Virginia; McPherson, Georgia; Sam Houston, Texas; Benjamin Harrison, Indiana; the Presidio of San Francisco, California; and either Korea or Germany. These sites afford a variety of climatic conditions.

Test subjects will be selected by grade and duty to represent a cross section of the Army. The majority of subjects will be lower-grade enlisted personnel, who incur the greatest financial burden in uniform care.

The year-round uniform will cost between $45 and $50 in clothing sales stores and be drycleanable only. It is planned to issue each new soldier two sets. However, since the target date for availability is not until August 1981, soldiers are advised to continue to replace worn-out uniforms with currently available fabrics.

## GSA SEEKS OTHER AGENCIES' REACTION TO SIMPLIFIED BASIC PROCUREMENT FORMS

The General Services Administration (GSA) is asking trade associations and other Federal agencies to evaluate proposed changes it has made to some of the basic procurement forms used by the Federal Supply Service (FSS).

The FSS annually buys nearly $3 billion of supplies, materials, and services for other Government agencies. For example, FSS buys all of the Army's office equipment. But GSA says current purchase contracts contain wordy, repetitive, or nonessential clauses.

According to a GSA spokesman, the simplified purchase contracts have 38 percent fewer words. He said clauses have been shortened or deleted, grouped according to genus and subject matter, and the language has been simplified.

The new forms, GSA 1424A, B, and C, would replace Standard Forms 33, 33A, and 32 now used by the Army and other agencies. Form 1424A contains all necessary representation, certification, and acknowledgement clauses now scattered throughout various forms. Form 1424B lists all necessary instructions, and Form 1424C lists the more common operational clauses.

If response is favorable, GSA says it will test the forms this Fall in handtool procurement. Although the forms are designed for use exclusively by the FSS, GSA expects other agencies—such as the Army—to eventually replace existing forms with models patterned after the GSA's simpler versions.

In a media advisory, GSA said it wanted to simplify contracting procedures and the complexity of doing business with the Federal Government.

## ARMY ANNOUNCES NEW PROCEDURES TO REDUCE LOSS OF TOOLS AND COMPONENTS

The Army is simplifying procedures for issuing handtools and components to soldiers and for fixing personal responsibility for these items.

Millions of dollars worth of these items mysteriously vanish each year. The new procedures are designed to accent command responsibility for logistics discipline and encourage soldiers to take care of U.S. Government property.

Components of each kit, set, or chest are listed in the supply catalog component list. There are 1,200 different lists, and they are being restructured and put in a simpler format.

Preprinted in the back of each new catalog is DA Form 2062, Hand Receipt/Annex Number. Soldiers will be required to sign a copy of this form, making them responsible for each component that is preprinted on the list.

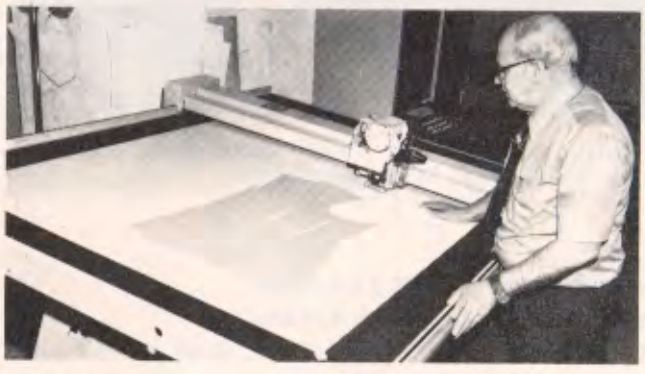
In the past soldiers signed a receipt for an end item such as a toolkit or jeep. Shortages or overages of components within the item were recorded on an annex that accompanied the receipt, but the annex was difficult to prepare and to keep current.

Units will be required to use the new form within 60 days of the publication date of each new catalog list.

This change will be incorporated in AR 710-2, Materiel Management for Using Units, Support Units, and Installations, now being completely rewritten. The revised regulation also will require a semiannual inventory of equipment instead of the present annual inventory.

Individuals who lose tools now have three recourses open to them—

- If fault is admitted, an exact replacement can be purchased at the post self-service supply store.
- If fault is admitted and the loss is $250 or less, a cash collection voucher may be signed and cash paid for the tool. Enlisted personnel have the option of signing a statement of charges and the cost of the item is deducted from their pay.
- If no fault is admitted, a report of survey is initiated and an investigation is conducted to determine liability.



☐ Clothing designers at the Army's Natick Research and Development Command now use a computerized pattern maker to grade and cut patterns for a full range of uniform sizes. The pattern maker, unique in the Armed Forces, quickly and accurately performs these tasks that sometimes took days to do by hand. Freed from these tedious, time-consuming duties, the designers can devote more time to styling new uniforms.

## NEW TRUCKS ON THE WAY

American Motors General Corporation will manufacture more than 5,500 Crane Carrier Corporation heavy trucks under a 4-year, $252-million contract from the U.S. Army Tank-Automotive Materiel Readiness Command.

The world's largest single commercial truck order calls for production of six different types of vehicles in the XM915-920 series. The family includes a line haul truck tractor (XM915) to pull the Army's new M872 breakbulk container, a high-performance light-duty transporter (XM916), a 20-ton dump truck (XM917), a 1,500-gallon bituminous distributor for road-building (XM918), a heavy-duty concrete mixer (XM919), and a medium-duty transporter (XM920).

The various models have a common engine, cab, chassis, and transmission. The Army expects this standardization to reduce supply problems, repair parts inventories, and training requirements.

Transportation and engineer construction units should receive the first new trucks in the Fall of 1978.

☐ This standardized truck tractor will power the new XM915-920 family of vehicles.

## INCREASED SOVIET LOGISTICS CAPABILITIES REFLECT CHANGE IN SOVIET POLICY AND DOCTRINE

Western writers have often stressed logistics support for ground operations as a major weakness of Soviet forces. According to *Understanding Soviet Military Developments*, prepared and distributed by the Office of the Assistant Chief of Staff for Intelligence, Department of the Army, it is questionable if this evaluation is still accurate.

The rear service units now found in Soviet divisions are geared toward rapid advance of ground units in a conventional or nuclear environment. Until recently both the stockpiling of materiel and the logistics support structure of combat units were geared toward a short war and the inevitable crossing of the nuclear threshold.

The recent change in Soviet attitudes which acknowledges the possibility of a prolonged conventional phase has also resulted in changes in the logistics support structure and in stockpiling of materiel to accommodate extended combat operations.

The study points out that while the possibility of a Soviet attack against Western Europe appears unlikely, the Soviet emphasis is on the offensive and on the advantage of tactical and strategic surprise. All their actions suggest an attacking posture and contradict political pronouncements that Soviet forces will never initiate war.

## REVISED AR 710-2 TAKES INTO ACCOUNT DSU'S QUICK SUPPLY STORE PERFORMANCE

A new AR 710-2, Materiel Management for Using Units, Support Units, and Installations, will permit direct support units (DSU's) to measure, with one set of statistics, the effectiveness of support to all their customers. The regulation is scheduled for publication early next year.

The change allows DSU commanders to combine quick supply store (QSS) statistics with authorized stockage list (ASL) statistics when filing monthly reports to major commands. In the past, there was no way to measure performance in terms of customer support for QSS items, even though the items are traditionally "good performers."

The revision adjusts the rates of demand accommodation and demand satisfaction, the two most widely accepted measures of supply performance, according to weighted averages or formulas.

These formulas are spelled out in DA Circular 710-13, issued in October 1976. The circular required major commands to forward to Headquarters, DA, monthly reports incorporating the new formulas. When the circular expires, this reporting will no longer be required.

However, the reports did prove DSU commanders could successfully calculate the formulas, which portray a more accurate picture of their units' performance than was possible under terms of AR 710-2, published in August 1971.

The newly revised AR 710-2 will incorporate the formulas and require unit commanders to continue preparing and submitting monthly internal reports to their major commands.

## IMPROVED UNIVERSAL ENGINEER TRACTOR READY FOR FULL-SCALE PRODUCTION

The improved universal engineer tractor (UET) is ready for full-scale production after having completed Government acceptance tests at Aberdeen Proving Ground, Maryland. The first production vehicles will be delivered approximately 15 months after a production contract is awarded.

Like earlier models, the improved UET will be used by combat engineers to perform standard earthmoving tasks. However, it offers a number of advantages.

The new UET has greater cross-country mobility, a level ground speed of 30 miles per hour that will allow it to keep pace with armored units, and a limited swim capability of 3 miles per hour. Fitted with light armor, it is more durable than its predecessors.

While its 32,000-pound weight is within air transport and airdrop limits, the UET can be frontloaded with 8 cubic yards of soil to double its empty earthmoving capability.

The UET is powered by a 285-horsepower diesel engine. The scraper bowl is fitted with a hydraulically operated apron and positive load ejector. The UET's front end can be raised and lowered by means of a hydropneumatic suspension system.

The tracked, multipurpose vehicle can doze, scrape, rough grade, tow, dump, and haul. Field tests performed at Fort Hood, Texas, proved that previous reliability problems have been overcome.

☐ The improved UET has greater durability and reliability than earlier models of earthmoving vehicles.

## NATO SHOOTS FOR SMALLER CALIBER

Eleven NATO countries, including the United States, have signed a memorandum of understanding for the testing, evaluation, and selection of a second NATO standard caliber of small arms ammunition.

The present NATO standard 7.62 millimeter ammunition, used in heavy weapons such as crew-served machineguns, will continue as a NATO standard cartridge. However, modern battlefield tactics require a light, high-velocity projectile for individual weapons.

Testing for this new caliber of ammunition is being conducted under the direction of an international test control commission. Technical tests, which will run for 1 year, began on 1 April 1977 at Cold Meece, United Kingdom, and Meppen, Germany. Military tests are scheduled to begin on 1 June 1978 at Hammelburg, Germany, and run for 1 year.

The final test reports, based on data from all test sites, are due in NATO headquarters on 15 January 1980.

## PROJECT CONCISE 'CLOSES' IN PHILADELPHIA

The closing of Philadelphia's Frankford Arsenal on 30 September signaled completion of Project CONCISE, a DA program to realine major field commands and selected Army staff elements.

Over a 24-month span, the following realinements of supply and maintenance functions took place—

- Savanna Army Depot, Illinois, became a depot activity, with its special weapons' mission transferred to Sierra Army Depot at Herlong, California.
- Lexington-Blue Grass Army Depot, Kentucky, became a depot activity, with its electronics maintenance functions continued at Sacramento, California, and Tobyhanna, Pennsylvania.
- Pueblo Army Depot, Colorado, became a depot activity, with its maintenance program for the HAWK missile system transferred to Letterkenny Army Depot, Chambersburg, Pennsylvania.
- Primary supply distribution points were established at depots favorably located geographically. Sharpe Army Depot, California, serves the western United States, the Pacific, and Alaska. Red River Army Depot, in Texarkanna, Texas, serves the Central States. New Cumberland Army Depot, Pennsylvania, serves the east coast and Europe.
- Frankford lost its armament development mission to the Armament Research and Development Command, Dover, New Jersey, and its materiel readiness functions to the Armament Materiel Readiness Command, Rock Island, Illinois. ALOG

# RESEARCH REPORTS

**Planning Army Depot Maintenance Requirements;** sponsored by U.S. Army Materiel Development and Readiness Command; conducted by U.S. Army Logistics Management Center (Logistics Studies Office). Study Information—AUTOVON 284-8256. Status: Draft study completed.

This study reviewed and analyzed DARCOM participation in the Army planning, programming, and budgeting system (PPBS) for depot maintenance. The study recommends continuance of current procedures for submitting gross depot maintenance requirements, and increased emphasis on DARCOM's participation in the early development of PPBS documents. These documents include the Army capabilities plan, the preliminary Army planning and programming guidance memorandum, and program budget guidance. Distribution of the study is limited.

**Use of End Item Age and Usage in Demand Forecasting;** sponsored by U.S. Army Materiel Development and Readiness Command; conducted by U.S. Army Logistics Management Center (Inventory Research Office). Study Information—AUTOVON 348-6984. Status: Completed.

This study identifies the impact of vehicle age, rate of use, and mileage on the demand for vehicle replacement parts. The effects of these factors were measured and incorporated into new formulas that help to improve demand forecasting during the initial 2-year provisioning period.

**Product Improvement Test of Track Utility, ¼ Ton, 4 x 4, 151A2 Series;** sponsored by the U.S. Army Tank-Automotive Materiel Readiness Command; conducted by the U.S. Army Cold Regions Test Center. Study Information—AUTOVON 273-1042. Status: Completed.

Several manufacturer's improvements, designed to withstand arctic environmental conditions, were tested on the M151 truck. Seven of the ten improvements withstood temperatures to −36 degrees Centigrade and were released for use on the vehicle. Distribution of test results is limited to U.S. Government agencies.

**Consolidation and Management of Supply Consumption Rates;** sponsored and conducted by the U.S. Army Training and Doctrine Command and the U.S. Army Logistics Center. Study Information—AUTOVON 687-3813 or -3403. Status: Under Department of the Army review.

The study recommends establishing a centralized element to be responsible for the management of logistics planning factors. A centralized planning factor management office would facilitate the efficiency and effectiveness of planning efforts in support of contingencies, simulations, and force structures.

# COMING EVENTS

## NOVEMBER

| | | |
|---|---|---|
| 1–3 | Logistics Center Advisory Board Meeting and Army Logistics Policy Council Meeting | Fort Lee, Va. U.S. Army Logistics Center |
| 2–4 | 20th Annual Conference—American Production and Inventory Control Society | Cleveland, Ohio Bond Court Hotel |
| 7–9 | Joint National Meeting—Operations Research Society of America and The Institute of Management Sciences | Atlanta, Ga. Peachtree Plaza Hotel |
| 7–11 | Aviation Manufacturing Technology Conference | Palo Alto, Calif. Rickey's Hyatt House |
| 28–29 | Conference of the American Institute of Aeronautics and Astronautics and the Technical Marketing Society of America | Los Angeles, Calif. Hyatt-L. A. International |
| 29–30 | Ninth Transportation Data Coordinating Committee National Forum | Washington, D.C. Capital Hilton Hotel |

## DECEMBER

| | | |
|---|---|---|
| 7–9 | Annual DOD Procurement Conference | Williamsburg, Va. Williamsburg Conference Center |

# CAREER PROGRAMS

## LAST CMF's REDESIGNED UNDER EPMS

The final group of five enlisted career management fields (CMF) has been approved for implementation under the Enlisted Personnel Management System (EPMS) and will be effective in March 1978.

The career management fields are—

- CMF 23—Air Defense Missile Maintenance.
- CMF 29 — Communications-Electronics Maintenance.
- CMF 31 — Communications-Electronics Operations.
- CMF 51—General Engineering.
- CMF 00—Exceptional Management Specialties.

All 36 career management fields have now been redesigned under EPMS.

## CAPSTONE NCOLP COURSE DESIGNATED

The Army has announced that all members of the Noncommissioned Officer Logistics Program (NCOLP) who have completed 3 to 5 years in the logistics field should attend the 4-week Logistics Management Development Course (LMDC) at the Army Logistics Management Center, Fort Lee, Virginia.

This course is viewed by the Department of the Army as a capstone in the education of NCOLP members. The course presents advanced training in fundamental management techniques in such areas as procurement, maintenance, and disposal. It is designed to round out the education a soldier receives in the NCOLP course at the Quartermaster School.

NCOLP members are also being encouraged to take courses in specialized areas of logistics management to prepare for varied NCOLP assignments. Those interested in these courses or in LMDC should contact—Commandant, U.S. Army Logistics Management Center, ATTN: DRXMC-A-R, Fort Lee, Virginia 23801.

## TWO AVIATION SPECIALTIES OPEN

Two aviation career specialties in the Officer Personnel Management System (OPMS) are open to all commissioned officers, except those in the Judge Advocate General Corps, the Chaplains Corps, and those Army Medical Corps officers not in the Medical Service Corps. Initial entry flight training is a prerequisite for the two specialties.

Specialty 15, Aviation, provides air support for land combat operations. Officers in this specialty command aviation units and activities, develop doctrine, or serve in staff positions. Specialty 15 is awarded as an alternate specialty upon the officer's graduation from flight training.

Specialty 71, Aviation Materiel Management, provides life cycle management of materiel that includes aircraft engines, instruments, and fuel systems. Officers in this specialty serve in aviation procurement and production control, distribution, maintenance, and other logistics-related positions.

Following completion of flight training, specialty 71 officers attend the Aviation Maintenance Officer Course at Fort Eustis, Virginia. Specialty 71 is awarded as a primary specialty to Transportation Corps officers or as an alternate to officers in other branches.

As OPMS specialties, 15 and 71 provide career opportunities from entry level through the grade of colonel. Those interested in aviation should consult AR 611-110, Selection and Training of Army Aviation Officers.

## ALMC COURSES ACCREDITED

Students may now receive undergraduate academic credit in seven correspondence courses offered by the Army Logistics Management Center (ALMC) if they enrolled in them after December 1976. One course allows 3 hours graduate credit.

Undegraduate credit is given for: Army Depot Operations Management Course (3 hours), Army Maintenance Management Course (2 hours), Defense Inventory Management Course (3 hours), Defense Procurement Management Course (3 hours), Defense Property Disposal Operations Course (2 hours), Defense Advanced Disposal Management Course (2 hours), and Logistics Executive Development Course (14 hours).

Three hours of graduate credit may be granted for the Logistics Executive Development Course.

If taken in residence at ALMC, an additional credit hour is granted for the Army Maintenance Management, Depot Operations Management, and the Defense Inventory Management Courses. The resident Defense Procurement Management Course carries 2 hours of graduate credit. Eighteen hours of undergraduate or 9 hours of graduate credit are granted for the resident Logistics Executive Development Course.

Those interested in taking these courses in either the resident or correspondence mode may write to —Commandant, U.S. Army Logistics Management Center, ATTN: DRXMC-ET-C, Fort Lee, Virginia 23801.

## INSTALLATION MANAGERS TO GET ASI 6Y

Officers who have held installation management positions or who have attended installation management-related courses now will have the additional skill identifier (ASI) 6Y noted in their records.

Officers who had experience in the installation management field before position coding under OPMS was established should request the ASI 6Y notation by writing to their career management division at the Military Personnel Center.

## PRIMARY LEADERSHIP COURSE UNDER STUDY

The U.S. Army Training and Doctrine Command began a pilot test of the Primary Leadership Course in selected Army Reserve schools this October. The 2-week course was presented to Active Army personnel during the past year.

The course is designed to be the basic supervision course for combat support and combat service support E4's and E5's who are, or will be, first-line supervisors. It introduces soldiers to communication and decision-making techniques early in career development.

The course is taught using the self-paced mode of instruction. It may be taken during 2 weeks of active duty or during inactive duty training assemblies.

If the test course is successful, it will be taught in all Army Reserve schools beginning October 1978.

## ALL GUARD OFFICERS COMING UNDER OPMS

The Army National Guard (ARNG) is scheduled to complete implementation of its Officer Personnel Management System (OPMS) in December. At that time approximately 30,000 ARNG officers from 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands will come under the system.

In the National Guard, OPMS is a decentralized system. Each State coordinates the education and career development for its resident officers. Approximately 4,000 officers from the States of New Jersey, Pennsylvania, and Tennessee were brought under the system during a 16-month test period ending last December. Inclusion of remaining officers began early this year.

## E9's REPLACING OFFICERS IN MANY STAFF POSITIONS

Approximately 140 sergeants major are being selected to fill senior staff officer positions in Army major and subordinate command headquarters as they become vacant. The opening of these positions to E9's will afford them an opportunity to perform at a higher professional level.

Typical logistics positions include assistant supply officer and assistant food service officer. Logistics positions are available to E9's with the following MOS's—

51H Construction foreman.

63Z Mechanical maintenance supervisor.

64Z Transportation senior sergeant.

76Z Senior supply sergeant.

94B Food service specialist.

00J Club manager.

Many positions are branch immaterial and can be filled by E9's of any MOS. Those interested in these positions should contact their assignment manager.

## CREDIT FOR NONRESIDENT COURSES RESTRICTED TO WAR COLLEGE AND CGSC

Army officers will receive military education level credit for nonresident senior service college training only by completing the Army War College corresponding studies course. Likewise, military education level credit for nonresident staff college training will be given only for completion of the Army Command and General Staff College (CGSC) nonresident course.

Credit will not be given for similar nonresident courses offered by the other service schools such as the Industrial College of the Armed Forces. These courses do not parallel the Army War College or the CGSC courses.

Army War College corresponding studies students include only the most promising senior officers, who are selected by a Department of the Army board. Nonresident CGSC students receive instruction in leadership, command, and staff procedures and techniques peculiar to the Army in field and major commands.

The Army will continue to permit officers to enroll in nonresident courses of the other services. ALOG

# RECENTLY PUBLISHED

**AR 5-3,** Installation Management and Organization, 26 July 1977.

**AR 15-27,** Automated Data Processing Personnel Career Management and Training Proponent Committee, 27 June 1977.

**AR 30-5,** Food Cost and Feeding Strength Summary, 22 July 1977.

**AR 55-133, C1,** Space Requirements and Performance and Cost Reports for Oversea Airlift of Passengers, 2 May 1977.

**AR 601-210, C9,** Regular Army Enlistment Program, 18 May 1977.

**AR 700-43, C2,** Defense Industrial Plant Equipment Center Operations, 20 May 1977.

**AR 700-50,** Development and Use of Non-Government Specifications and Standards, 15 July 1977.

**AR 708-1, C18,** Cataloging and Supply Management Data, 25 June 1977.

**AR 725-1,** Special Authorization and Procedures for Issues, Sales, and Loans, 20 June 1977.

**DA Pam 18-7, C2,** Army Information and Data Systems—Data Processing Installation Management Guide, May 1977.

**DA Pam 18-10-12,** Army Automation Review, July 1977.

**DA Pam 310-3,** Index of Doctrinal, Training, and Organizational Publications, 1 June 1977.

**DA Pam 310-7,** U.S. Army Equipment Index of Modification Work Orders, 1 May 1977.

**DA Pam 600-11,** Warrant Officer Professional Development, 7 July 1977.

**DA Pam 740-1,** Instructor's Guide for Basic Military Preservation and Packing, Storage and Supply Activities, 1 May 1977.

**FM 9-55D/CM,** Commander's Manual, MOS 55D, Explosive Ordnance Disposal Specialist, 3 June 1977.

**FM 9-55D5,** Soldier's Manual, MOS 55D, Explosive Ordnance Disposal Specialist, Skill Level 5, 3 June 1977.

**FM 9-63C/CM,** Commander's Manual, MOS 63C, Track Vehicle Mechanic, 16 May 1977.

**FM 9-63C4,** Soldier's Manual, MOS 63C, Track Vehicle Mechanic, Skill Level 4, 16 May 1977.

**FM 9-63H/CM,** Commander's Manual, MOS 63H, Automotive Repairman, 15 May 1977.

**FM 10-76P/CM, C1,** Commander's Manual, MOS 76P, Stock Control Supplyman, 17 June 1977.

**FM 55-70, C2,** Army Transportation Container Operations, 2 May 1977.

**DA Cir 310-97,** Notice to Users of the Federal Supply Catalog, Identification Lists (IL's), 9 June 1977.

**DA Cir 750-50,** Modification of Materiel, 18 May 1977.

**ARTEP 29-97,** Main Supply and Service Company, Supply and Service Battalion, Airmobile Division, 27 May 1977.

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

## METRIC CONVERSION TASKS ASSIGNED

Army Regulation 700-1 prescribes responsibilities and policies for coordinating the Army's conversion to the metric measuring system. It assigns primary responsibility for conversion plans and programs to the U.S. Army Materiel Development and Readiness Command and its recently established DA Metric Office. The office coordinates and reviews Army conversion efforts and serves as a central clearing house for technical information and advice.

## BASIC MAINTENANCE REGULATION REVISED

The revision to AR 750-1, Army Materiel Maintenance Concepts and Policies, assigns responsibilities for the maintenance of all Army materiel. It establishes standards for evaluating maintenance efficiency in direct support and general support units.

The regulation is expected to be distributed early next year.

## WASTE MANAGEMENT PROGRAM OUTLINED

Army Regulation 420-47, Solid Waste Management, sets guidelines for implementing paper product recycling facilities as required by the Environmental Protection Agency. This regulation supersedes AR 420-47, Refuse Collection and Disposal, dated September 1967. ALOG

# ALOG EMPHASIS

*(Continued from page 1 )*

**TRAINEES GET CLOTHING LATER**

Soldiers at TRADOC reception stations now receive only essential clothing items such as fatigues, boots, underwear, and gloves during the first half of basic combat training. High-value items such as dress uniforms and overcoats, as well as nonrecoverable items such as dress shoes, headgear, and socks, are issued during the second half. The clothing deferred issue program is aimed at reducing the outright loss of nonrecoverable items as well as the cost of collecting, cleaning, classifying, and altering recoverable items. TRADOC adopted the program because early discharges or significant weight changes often occur during the first few weeks of training.

**TACMIS OFFICE ESTABLISHED**

A project office responsible for five tactical management information systems (TACMIS) has been established at the U.S. Army Computer Systems Command, Fort Belvoir, Virginia, and replaces the command's Mobile Systems Integration Office. The systems are used by combat service support troops to conduct their daily logistics and personnel operations, and by commanders at the corps and division levels to gather data needed to support the soldier in the field. They include the combat service support system (CS3), the decentralized automated service support system (DAS3), the IBM 360-40 mobile corps, the Army National Guard and Reserve mobile UNIVAC 1005 system, and the corps automation requirements (Project CAR).

**ENEMY-MATERIEL USE IDEA GAINS**

Technical intelligence is one lesson of modern battle the 1973 Mideast war helped to drive home. It means to gather information through study of captured enemy equipment. It also encourages use of the enemy's small arms, vehicles, petroleum products, or other equipment against him with great psychological advantage. The concept was played-out in LOGEX '77. Currently, the Active Army's only technical intelligence unit is Company D, 519th Military Intelligence Battalion, Aberdeen Proving Ground, Maryland. However, a company spokesman said the Army has approved the concept of assigning 16-man technical intelligence teams to future Army corps.

**USAMMC ASSUMES USAREUR FUNCTION**

In the latest transfer of support functions from U.S. Army, Europe (USAREUR), to CONUS, the Maintenance Management Center (USAMMC), Lexington, Kentucky, has been given responsibility for preparing and distributing annual maintenance management reports directly to USAREUR commanders. These reports, which provide information on the condition of tactical vehicle fleets, formerly were prepared and distributed by the USAREUR Materiel Management Center at Zweibruecken. USAMMC will begin distributing the reports in November. The move is part of the Modernization of Logistics (MODLOG) program.

**SYSTEM MANAGERS REPRESENT USERS**

Under a TRADOC total system management concept, TRADOC system managers will cooperate with DARCOM project managers in developing 30 weapon systems. The concept is designed to assure user involvement early in the materiel acquisition cycle. Each system manager will be a colonel who has three assistants specializing in logistics, personnel, and training. He will represent the user view to DARCOM, DA, and to Congress, when necessary.

**DATA COLLECTION METHODS EXPANDED**

A change in The Army Maintenance Management System's sample data collection gives major commands three methods for the collection of organizational and direct support engineering data—free flow, semicontrolled, and intensely controlled. Data collection is useful in the life cycle management of materiel and weapon systems, and the three methods will permit analysis of operational and support costs as well as identification of reliability, availability, maintainability, and durability characteristics. The change is contained in AR 750-37, revised 15 June 1977.

**VEHICLE FAMILY DUE FIELD TESTS**

Prototype qualification tests of the family of military engineer construction equipment (FAMECE) are being conducted at the U.S. Army Mobility Equipment Readiness and Development Command, Fort Belvoir, Virginia. After these tests are completed in March, field operational tests will be performed at Fort Bragg, North Carolina. A FAMECE "vehicle" consists of a common power section coupled to one of eight work sections—dozer, loader, dumper, distributor, grader, scraper, and two compactors. These vehicles will be used by combat engineers.

**AAFES ADVISES UNIFORM CARE**

Tips on the care of the new Army polyester texturized woven serge uniforms are being provided by the Army and Air Force Exchange Service (AAFES) to help customers get the most from the uniform. AAFES cautions customers to use extreme care when inserting or removing insignia and medals having pins or metal clasps. In addition, the woven uniform should not be worn on successive days without giving the fabric a chance to recover.

**WOMEN TO BUY OWN FATIGUES**

Enlisted women will have to start buying utility uniforms or fatigues out of their clothing maintenance allowance beginning next October. Fatigues have been initial issue items for enlisted women since October 1976. To defray part of the new expense, certain articles of clothing such as overshoes and gym shoes will be deleted from the mandatory clothing list.

**SELF-MOVES SAVE MONEY**

A commercial mover may charge the Army $1,000 to move a soldier's household goods. If the same move is accomplished by the soldier in a privately owned or rented vehicle, he is reimbursed 75 percent of that cost or $750, less any costs incurred by the Government for the rental vehicle, packing materials, and operating expenses. The result is a 25-percent savings for the Army and a cash incentive to the soldier. According to an Army spokesman, the "Do It Yourself" (DITY) household goods move program means the soldier's goods will arrive when he arrives with less chance of being damaged. In a recent 3-month period, 1,496 DITY moves saved the Army $210,868.

**MAX WAC TESTS WOMEN SOLDIERS**

On 1 October 1977, the Army Research Institute for the Behavioral and Social Sciences turned over a final management report on Maximum Women Army Content (MAX WAC) tests to the Deputy Chief of Staff for Personnel. The report analyzed the performance of combat support and combat service support units composed of up to 35 percent women soldiers. During field tests, women drove convoy vehicles, repaired tank engines, pitched tents, cooked on field ranges, evacuated patients, erected signal antennas, and operated radio and teletype rigs. MAX WAC consisted of 72-hour exercises conducted between October 1976 and June 1977 among 55 company-size units at 20 installations in CONUS and Hawaii.

**'FLYING SAUCER' CAP OPTIONAL**

Although enlisted men no longer receive the green service cap, or so-called "flying saucer," as a standard issue item, they still have the option to wear it when not in a formation. The "saucer" was deleted from the men's clothing bag on 1 October, but clothing sales stores continue to stock and sell it. The cap remains an organizational issue item for enlisted men assigned to ceremonial units, bands, and honor guards. Officers are still required to wear the service cap with the Army green uniform, but may wear the garrison cap with the green uniform when in a travel status and with the short-sleeve Army tan Summer uniform.

**TRANSPORTATION STUDIES READY**

A bibliography of studies and a bibliography of operations research models on the subject of "Transportation Systems" are available to authorized persons. Write DLSIE, ALMC, Fort Lee, Virginia 23801, or call AUTOVON 687-4546 or commercially (804) 734-4546.

**INDIANTOWN GAP MONITORS MONTHLY AMMO FORECASTS**

At Fort Indiantown Gap, Pennsylvania, an automated ammunition forecasting system provides custom-tailored response to ammunition requirements requested by the 150 to 200 Army National Guard and Army Reserve units that train there year-round. Each month, commanders receive a computer printout of their ammunition forecasts. Changes in forecasts may be written on the printout and, if submitted by the 15th of the month, will be incorporated in an updated printout within days. The automated system has achieved a near-zero forecast error rate, according to a spokesman.

**MISSILE MINDER ENTERS PRODUCTION**

The Army has awarded a $26-million contract calling for delivery of 12 AN/TSQ-73 missile minders beginning in July 1978. A command and control system capable of coordinating the firepower of surface-to-air missiles, the missile minder is a part of the Army Tactical Data System (ARTADS). From its shelter, the minder tracks and identifies aircraft to provide the air defense commander with realtime threat evaluations and weapon assignments.

**AUTOMATIC WEAPON TO BE DEVELOPED**

A $2,056,249 contract has been awarded by the Army Armament Materiel Readiness Command for development of a lightweight, one-man, automatic weapon capable of delivering a fusillade of sustained fire at long ranges. The contract also calls for engineering support and repair parts to support the Army's testing of the new weapon. It will replace the M16A1 only in the automatic rifle fire mission and may replace one or more of the M60 machineguns in the rifle platoon.



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# Enlisted Brass Designated

EVER SINCE the Army authorized branch insignia to be worn on uniforms, enlisted personnel have had no clear guidelines to follow that linked their primary military occupational specialties (MOS's) with specific branches. Often the specialties contained duties that could apply to more than one branch, and confusion resulted.

Now the Army has established a policy that ends this confusion. The insignia for a primary specialty reflects the branch of the Training and Doctrine Command school that is the proponent for training in that specialty. For example, the Quartermaster School trains MOS 76D, materiel supplyman. Therefore, soldiers who hold that primary specialty wear only Quartermaster Corps insignia, even when serving in an alternate specialty.

Enlisted personnel with logistics or logistics-related primary specialties may determine the correct branch insignia to wear by finding their primary MOS's in the following branch groupings.

**Adjutant General**

74 series.

**Air Defense**

24B, 24C, 24D, 24E, 24F, 24G, 24M, 24N, 24P, 24Q, 24U; 25D, 25G, 25J, 25K; 26H; and 28M.

**Armor**

45N, 45P, and 45R.

**Chemical**

54D and 92D.

**Engineer**

41B, 41K; 51B, 51C, 51D, 51F, 51G, 51H, 51J, 51K, 51L, 51M, 51N, 51P, 51R; 52 and 53 series; 57D; and 62 series.

**Field Artillery**

21G, 26B, and 35D.

**Medical**

35G, 35S, 35T, 35U; 76J; 91R; and 94F.

**Military Intelligence**

26C, 26K, 26M, 26N; 33S; and 41G.

**Ordnance**

21L; 22 and 23 series; 24H, 24J, 24K, 24L, 24V; 25H; 27 series; 34G; 35H; 41C; 44B, 44E; 45B, 45K, 45L, 45Z; 46N; 51A; 55 and 63 series.

**Quartermaster**

43E, 43M; 57E, 57F; 76D, 76P, 76V, 76W, 76X, 76Y, 76Z; 92C; and 94B.

**Signal**

26D, 26L, 26V, 26Y; 31B, 31E, 31J, 31L, 31S, 31T, 31U, 31W; 32E, 32F, 32G, 32H; 34B, 34E, 34F, 34H, 34J, 34K, 34Z; 35B, 35E, 35K, 35L, 35M, 35P, 35R; 36 series; 41E, 41J; and 72 series.

**Transportation**

57H; 61, 64, 65, 67, and 68 series; 71N, 71P; 93E, 93H, 93J; and 00B.

## Watch future issues for—

- COMMZ Logistics Concept
- Procurement Challenges in the 1980's
- Force Planning Simplified
- Joint Oil Analysis Program
- Tapping the Logistics Reservoir
- The DOD Materiel Distribution System
- Logistics Support of the Army Reserve
- Defense and Small Business
- Assuring Quality
- The 105 Wargame
- Overcoming Company Grade Mentality
- MIS Management
- Ammunition Behind the Scenes
- Logistics ADP Systems