Quartermaster

PROFESSIONAL BULLETIN

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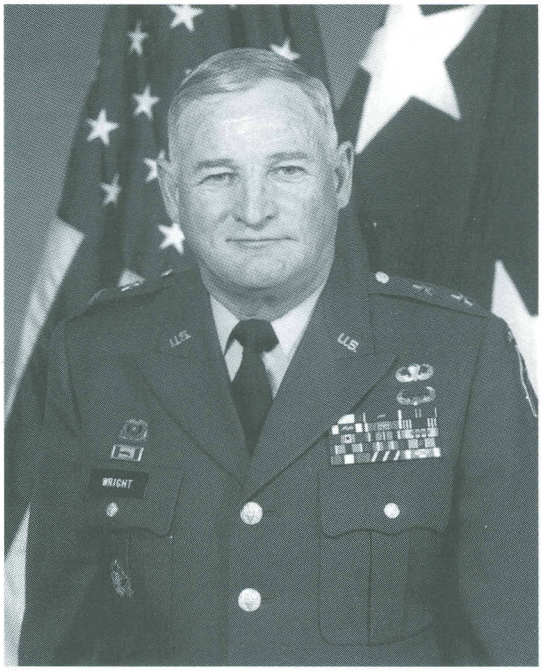
SUPPORTING VICTORY

REVOLUTION IN

From The Quartermaster General



Major General James M. Wright

The high operating tempo here at the Home of the Quartermaster Corps continues unabated, the same, I know, as in your units in the field. I am heartened by the progress I see on a daily basis at the US Army Quartermaster Center and School (USAQMC&S) and in the US Army Combined Arms Support Command (USACASCOM). Particularly encouraging is the continued liaison and partnership between Fort Lee and our Quartermaster leadership (general officers, warrant officers, command sergeants major, and sergeants major) throughout the Army. Changes are occurring at a phenomenal rate, and this link between the training base and our operational forces is vital to designing, developing and fielding the technologies, programs and personnel strategies to logistically support the Army of the 21st Century.

Every training department is heavily engaged in better ways to train soldiers, either in residence or via Distance Learning. Our instructional departments continue to send high-quality instruction by Telenetwork (TNET) broadcasting. The ongoing installation of Classroom XXI represents a significant step in the modernization of our instructional capabilities and will enhance ability to beam instruction from our USAQMC&S hub at Fort Lee to units throughout the Army. The Distribution Rock Drill and Army Warfighting Experiment Force XXI projects are moving in full gear. We are scheduled to brief the Chief of Staff of the Army on Battlefield Distribution in May 1998.

Many other events and initiatives highlight our commitment to our PEOPLE. For example, the 23d Quartermaster Brigade has developed a number of superb programs aimed at reinforcing the professional and personal growth of leaders and soldiers alike and at embedding the traditions, core values and heritage of our Corps and Army in our training. The Progressive Soldierization (a critical partnership of effort between our drill sergeant cadre and our platform instructors) and the Drill Sergeant Life Cycle Model are cornerstones of this effort. Our goal is to produce the highest quality Quartermaster soldiers and leaders in our history. Soldiers, noncommissioned officers, warrant officers and officers who are physically fit, technically and tactically competent; who demonstrate Army values as a daily habit; and who possess a powerful fighting spirit must be our legacy.

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Major General James M. Wright, 45th US Army Quartermaster General, has held numerous command and staff positions. His previous assignments include Commander, 21st Theater Army Area Command, Germany; Deputy Chief of Staff, Logistics, United States Army, Europe, and Seventh Army and also Director of Logistics, Controller Staff, Exercise Atlantic Resolve '94; Director of Plans and Operations for the Deputy Chief of Staff, Logistics, United States Army; Commander, 1st Corps Support Command (COSCOM), XVIII Airborne Corps; Commander and Assistant Division Commander, Division Support Command, 7th Infantry Division (Light); Chief of Staff and later Deputy Commander, 1st COSCOM; Commander, 426th Supply and Service Battalion, 101st Airborne Division (Air Assault); Commander, Special Troops Battalion, 1st COSCOM; Commander, Logistical Support Unit, Multinational Force and Observers, Sinai; S1 (Logistics) Advisor, Advisory Team 25, United States Military Assistance Command, Vietnam; Commander, 25th General Supply Company, 95th Supply and Service Battalion, 3d Support Brigade, United States Army, Europe, and Seventh Army.

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The Quartermaster General
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FRONT COVER: Wade Fischer of Defense Automated Printing Service, Fort Lee, VA, designed the cover.

INSIDE BACK COVER: Keith K. Fukumitsu, Quartermaster who researches and illustrates the battalion-size units featured with a page in each edition, also designed the graphic art for the special supply automation section in this issue. LTC (Retired) Fukumitsu was formerly assigned as Chief of the Course Development Division, Directorate of Training and Doctrine, US Army Quartermaster Center and School, Fort Lee, VA.

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Through Automation, Conference Continues

Command Sergeant Major Larry W. Gammon

Communicating by E-mail, more than 80 senior noncommissioned officer (NCO) leaders are continuing to discuss and resolve issues raised at the 3d Annual Quartermaster Sergeants Major Conference, 23–27 Sep 97, at the US Army Quartermaster Center and School, Fort Lee, VA. Sergeants Major from Armywide units raised questions about topics such as logistics automation, equipment modernization, Classroom XXI, duty descriptions for soldiers with the military occupational specialty (MOS) 92A (Logistical Automation Specialist), and equipment modernization.

Feedback on conference issues will be discussed and distributed by E-mail throughout the coming year. As different agencies work the issues, results will be forwarded to the attendees. These updated issues will be briefed as a starting point for the next conference, 14–18 Sep 98.

This year's conference participants received briefings on leadership challenges and changes in our Army, the state of the Quartermaster Corps, concerns from the field, Corps history, enlisted personnel status, a Reserve Component update, and the Association of Quartermasters. The Department of the Army (DA) branch chief for Quartermaster personnel and the DA Sergeant Major (SGM)/Command Sergeant Major (CSM) branch chief also briefed. The CSMs and SGMs toured the training facilities and departments at the Home of the Quartermaster Corps. The Petroleum and Water Department, Aerial Delivery and Field Services Department, Logistics Training Department, Mortuary Affairs Center and the Army Center of Excellence, Subsistence briefed their equipment, programs, training schedules and layouts.

Each day of the conference, the SGMs and CSMs were invited to participate with their choice of unit in physical training. On 26 Sep 97 at 0500, Major General James M. Wright, the 45th Quartermaster General, led a four-mile run in 36 minutes.

The conference participants broke into small discussion groups to encourage more feedback. Seven groups of SGMs and CSMs explored seven different topics before briefing The Quartermaster General and myself. The format for each group's briefer was threefold: actions to STOP within the group's assigned topic, actions to START, and actions that should CONTINUE. This small group format proved to be very helpful not only for the SGMs and CSMs who could voice their input directly to Corps leadership, but also for the Quartermaster leadership who can now work some issues throughout the year and electronically report progress to the field.

For example, in the area of logistics automation, the SGMs and CSMs in the small groups recommended "how-to" CD-ROMs for the field, Unit Level Logistics System/Standard Army Retail Supply System-Objective courses at Fort Lee, and immediate train-up of the Global Combat Support System-Army, (formerly called Integrated Combat Service Support System (ICS3)). The Quartermaster General was briefed that LOG DATA communications are currently insufficient for battlefield needs. Conference participants also want to establish a training base before consolidating any MOSs in the future and to re-establish a senior enlisted course for merging MOSs but in a CD-ROM or Distance Learning format. Senior Quartermaster NCO leadership requested some order for assigning support soldiers to combat support service units within a division and a reclassification to the 92 Series at the rank of SFC and above.

(Continued on Page 3)

(Continued from Page 2)

To reduce the conference costs, we distributed all briefings and related information to each attendee by E-mail. This method also gave NCOs a record of the conference to easily distribute within their respective worldwide commands.

My E-mail address is:

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You can access the Quartermaster Home Page for the *Quartermaster NCO Professional Development Guide* and other NCO news by typing:

http://www.lee.army.mil/quartermaster

Please ensure that my office has your E-mail address, and any changes, as soon as possible. We are in the Automation Age and must take advantage of computer capabilities.

Command Sergeant Major Larry W. Gammon has served in a variety of leadership positions as Command Sergeant Major, 45th Corps Support Group (Forward), Schofield Barracks, Hawaii; Command Sergeant Major, 23d Quartermaster Brigade, Fort Lee, Virginia; Commandant, Noncommissioned Officer Academy, Fort Lee; Command Sergeant Major, 99th Forward Support Battalion, Fort Lewis, Washington; First Sergeant, Headquarters and Headquarters Company, 109th Forward Support Battalion, Fort Lewis; First Sergeant, 2d Support Command Corps Materiel Management Center, Stuttgart, Germany, and Platoon Sergeant, S4 Noncommissioned Officer in Charge. His military education includes Airborne School, the Sergeants Major Academy, First Sergeants Course, Senior Supply Sergeants Course, Noncommissioned Officer Logistics Course and Advanced Noncommissioned Officer Course.

(Continued from Inside Front Cover)

We recently hosted a Command Sergeant Major/Sergeant Major Conference as well as a Quartermaster Warrant Officer Conference, both of which were rousing successes. We had one-third of our warrant officers present for their conference, which, to me, was a stirring testimony to our togetherness and sense of purpose. I believe that our warrant officers represent a very powerful, untapped resource that we can leverage to solve many of the problems we have in the field. They have been our "technical" safety net for years and should be given special consideration as we seek to gain effectiveness and efficiencies in our systems. These conferences will become annual events.

I will keep up the fires here at the USAQMC&S and work diligently to feed the force with highly spirited and highly trained soldiers. I ask each of you to continue your superb efforts in the field to further develop our most precious resource – our people – and to render uninterrupted support to our great Army.

Enlisted History Office

The Regimental Command Sergeant Major has established an enlisted history office at the Home of the Quartermaster Corps to collect, store and access historical documents on noteworthy personnel to keep for use by future researchers. MSG Melvin K. Kendricks is actively interviewing retired Quartermaster enlisted soldiers and noncommissioned officers and seeking the records of key "personnel who have moved on." MSG Kendricks would like to reach anyone who knows Quartermaster enlisted soldiers, past or present, who have made a difference in the success of the Quartermaster Corps. Phone MSG Kendricks at (804) 734-4743 or DSN 687-4743; E-mail to kendricm@lee-dns1.army.mil; or write to him at this address:

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CORRECTION: The acronym "FARP" was incorrectly identified in the article titled *The 3/5 Platoon – No Fuel: No Flames! No Bullets: No Bang!* by MSG Melvin K. Kendricks in the Autumn 1997 edition. In this platoon of Petroleum Supply Specialists and Ammunition Specialists within an Aviation battalion, a "FARP" refers to a Forward Arming Refueling Point.

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GCSS-Army Development: More Than Technology

LTC Thet-Shay Nyunt

By now, those who were caught by surprise by the Information Age have either learned to swim or are hanging onto whatever floats. In any case, what we all have come to realize is that we cannot swim against the current and hope to survive. As the Information Age matures both technologically and in our ability to understand it, we are faced with new challenges in maximizing the use of technology to get the most out of limited resources. This article describes the major combat service support (CSS) automation initiative, called the Global Combat Support System-Army (GCSS-Army) and how the Army will get there. The GCSS-Army was formerly known as the Integrated Combat Service Support System (ICS3).

Army CSS information technology focuses on developing the systems and processes for Force XXI. The major system data integration effort centers on GCSS-Army. GCSS-Army development, though, is more than just selecting system hardware and writing new software. GCSS-Army must incorporate and facilitate doctrinal initiatives in Battlefield Distribution, Velocity Management and emerging combat, combat support and CSS organizational structures.

GCSS-Army development will bring together Business Process Redesign for CSS functions, bridge communications below the brigade level and integrate data from other Army and joint systems. GCSS-Army in total will be greater than the sum of its parts. GCSS-Army is a large project that needs to be understood in terms of its place in the Army's automated systems evolution, the development process and the functional components of GCSS-Army.

Systems Evolution

Islands Of Automation. By technological necessity, the development of systems in Army logistics was single track or "stovepiped." The state-of-the-art level for the first systems did not readily permit more than one technical function. Quartermasters in supply, for example, took requisitions from the supply support activity (SSA) to depot, using their own particular channel of communications to link together multiple computer systems, each operating unique software. Customer units could only go through supply channels to obtain any information about their requisitions. In many ways the customer was servant to the system: no status, resubmit, requisitions rejected, resubmit. The technology available was unforgiving. In these early days of Army logistics, computing required mainframe computers which used punch cards for both programming and for data. In the punch card era, receipts and requisitions once processed updated records, produced materiel release orders and passed requests to the next level of supply if stocks were not on hand. At each level of supply, similar computer transactions took place until that supply level with the "stock" satisfied the requisition. At that time, the portable computers were machines that could be hauled by a truck. Not so long ago, units needed specially trained computer operators to operate the computer systems and assist logisticians in their missions. Over time, other manual processes were automated, creating "islands of automation" for each CSS function. The current logistics Standard Army Management Information Systems (STAMIS), although much smaller, are essentially stand-alone computers with the capacity to pass data along their particular "stovepipe" such as maintenance, supply or property accountability. The idea that systems could be anything other than "stovepipes" was not conceivable until the technology made interactivity feasible and the cost per unit for computers was economically practical.

Interfaces Not Enough. The fielding of "islands of automation" created several new challenges for users and consumers of STAMIS information. As the price of personal computers dropped, units generally could take advantage of automation. For the first time, the personal computer allowed units to use the computer technology for property accounting, supply and maintenance management. The data from information systems became an integral part of unit management. While management of "stovepipe" systems became more routine, gathering information from multiple databases remained a considerable task. For example, a commander asking about the status of the motor pool must take the following actions:

- Call the supply room to query Standard Property Book System- Redesign (SPBS-R).
- Call the Satellite Access Authorization for a query of Standard Army Retail Supply System (SARSS-1).
- Call the motor pool for a Unit Level Logistics System-Ground (ULLS-G) query.
- Call the direct support shop officer for a query of Standard Army Maintenance System-Level 1 (SAMS-1).
- Call the S1 for a query of Standard Installation/ Division Personnel System (SIDPERS) to see if soldiers are available and properly qualified.

- Call training and see if other training is conflicting with maintenance.

A Better Way

There had to be a better way. At higher levels of command, gathering information becomes more difficult because logistics information "stovepipes" diverge from command channels. To bridge the "islands of automation" and maintain these "islands," technical solutions had to be found. One solution, short of full integration, was to provide bridges to the "islands of automation." This solution called for the development of interface systems with the sole purpose of capturing and translating data while presenting it in an intelligible manner.

One interface system now in the field is the Integrated Logistics Analysis Program (ILAP). ILAP allows higher-level commands such as division and corps to bring together varied data sources such as the SARSS, SAMS, Standard Army Financial Inventory Accounting and Reporting System (STARFIARS), and Logistics Intelligence File systems into a coherent format to support management decisions. This application eliminates the need for staff officers to use multiple terminals or wade through volumes of printouts. The interface system is an interim solution that bridges the "islands" but does not integrate data. A prototype, developed for use at the battalion level, demonstrated that interface technologies could fuse data from SIDPERS, ULLS-G and ULLS-S4 and extract data for manipulation using office automation software. The utility of "interface" systems has been demonstrated, and their usefulness is without question. System developers hope to use the "lessons-learned" interface systems and include some of their functions in the GCSS-Army Management Modules.

GCSS-Army was formerly known as ICS3.

Integration. The previous illustration of getting status from a motor pool is an example of the complexity and variation of data sources. Bringing together useful data at each level of command and at each level of logistics is the goal of GCSS-Army. The aim of GCSS-Army is to integrate multiple logistics functions, such as supply and maintenance, into a single software application that runs on a single hardware platform. GCSS-Army will be both a functional system and a system that provides management information at successive levels of command and logistics echelons. The GCSS-Army initiative is feasible today, largely because personal computer and networking technologies have matured to the point where integration actually is possible. An attempt of this type 15 years ago would have meant the installation of mainframe computers at company-size elements, dedicated communications lines and a cadre of computer specialists to maintain the system. Integration of Army CSS systems, given its technological history, will not simply be accomplished with a clean-sweep installation of one system. The vision for GCSS-Army has three phases.

- **Phase I-Retail**. The goal is to establish a solid basis for business process reengineering. GCSS-Army at the company-level unit will incorporate the functions of property accountability, maintenance management and supply and also will provide data interfaces for medical, finance, transportation and personnel. At higher command and logistics echelons, management modules will gather and analyze data similar to ILAP, but will have the benefit of using data from a common language and format. It is proposed that many currently fielded systems capable of running Windows New Technology (NT) will be able to run GCSS-Army. Units without such capability will be fielded hardware.
- **Phase II-Retail Wholesale Integration**. The challenge in this phase is the execution of business process reengineering in order to integrate CSS data from the support weapons system platform to the sustainment base. In other words, data needs to flow seamlessly from factory to foxhole and back as necessary. Current architecture requires data to flow between retail (SARSS) systems to an entirely separate wholesale system. It is envisioned that GCSS-Army supply will move and process data continually. Key to this phase is business process reengineering not only in CSS operations, but also in the joint arena. Optimizing Army processes is necessary to maximize use of funds and the efforts of personnel.
- **Phase III-Full Operational Capability (Joint Integration).** This phase will be com-

pleted by implementing all required interfaces with systems in the joint community, national sustaining base systems, and when applicable, the systems of US allies. At this point, GCSS-Army will have access to all CSS data sources, will offer complete interoperability, support single-source data entry and will have technical architecture to integrate with the Global Combat Support System.

Scheme Of Maneuver. The task is complex and will not happen overnight. The lieutenants will be senior captains by the time Phase III is completed. The work on Phase I is already in progress. Project Manager (PM) Integrated Logistics Systems (ILOGS) is developing the maintenance module for GCSS-Army. Supply, property accountability and management modules for varying levels of command will follow. Recent history shows that technological innovation occurs at a rapid pace, with processor speeds doubling every few years. At this pace it will certainly be difficult to visualize Phase III hardware or software. Given the constancy of change, the material developer's challenge is to build a sufficiently flexible system that will incorporate technological evolution. It should be noted that the current fielding of STAMIS (ULLS-S4, SAMS-1 and Standard Army Ammunition System-Modernization (SAAS-MOD)) is coming with the hardware (Pentium computers) suitable for GCSS-Army. The establishment of the GCSS-Army baseline in the next couple of years will prepare the system for the next phases.

General Officer Working Group. GCSS-Army is a young program that will not reach maturity until the end of the first decade of the next century. Working toward integration will necessarily involve the input and cooperation of many commands, agencies and proponent owners of processes and existing systems. A natural question arises in the discussion about interagency cooperation: Why would groups, which historically have had difficulties, work together now? Shifting away from the "islands of automation" paradigm is tough because so many interests and visions are involved. The combat developers for GCSS-Army saw the complexity when the concept was first explored within the CSS community. Although the concept was more widely briefed, enthusiastic support was not forthcoming. The strategy called for the establishment of GCSS-Army as the Army's Force XXI CSS system, which would carry the requisite general officer clout and direction.

In July 1997, the commander of the US Army Combined Arms Support Command (USACASCOM) presented the Army leadership with the plan of appointing a General Officer Working Group (GOWG) to oversee and guide GCSS-Army. In short, the project required the unity of command that only the appointment of a four-star general could offer. Such a leader would have the authority to work across Army commands, processes and systems necessary for the project. As of the writing of this article, the commander of the US Army Training and Doctrine Command was appointed by the Army Chief of Staff to lead the working group. The executive agent for the project is the USACASCOM commander. USACASCOM is proponent for CSS combat developments. The GOWG represents organizations with a diverse range of responsibilities, ranging from the US Army Materiel Command and its subordinate commands, major Army commands, the Assistant Secretary of the Army (Financial Management), Defense Logistics Agency, Department of the Army staff, the US Army Reserve, Army National Guard, US Army Signal Center, US Army Europe, Army Corps of Engineers, Office of The Surgeon General, US Army Quartermaster Center, Soldier Support Institute, US Army Ordnance Center and US Forces Korea.

GCSS-Army better automates combat service support missions.

Business Process Redesign

Computers, in general, automate activities normally carried out by humans. A series of activities to support a given function is a process, whether the process is filling out a form or updating a record. Complex tasks that involve several functions are called business processes. The computer routines that handle activities (from accounting of property to updating maintenance records to processing requests for supplies) automate labor and time-saving functions. In Business Process Redesign, each process is examined, component by component. Where there is potential for improvement, that process is redesigned. The business process supply was changed when electronic requisitions replaced DA Form 2765-1. The business process eliminated the need to produce a

requisition by the supply sergeant and eliminated the need for editors at the SSA. Optimally, an electronic requisition now flows into SARSS-1 where editing and financial accounting functions are completed automatically. Business Process Redesign will look at processes at each level of command and in the echelons of logistics for each functional area.

Joint Applications Development

Business processes and the actual software development are very closely related, although not all software seems so. The general scheme of development requires individuals with in-depth understanding of the process to work very closely with those designing the system and those writing the actual code. The Joint Application Development (JAD) process is a requirement-definition and user-interface methodology. The JAD in many ways will redesign the way Army CSS software is developed. Although the JAD process is new to the Army, it is not revolutionary. The JAD process has worked effectively in commercial industry and private companies that reported JAD can reduce development time by up to 35 percent.

In a JAD, end-users, executives, managers and developers attend intense meetings to work out details. When in session, the JAD becomes the principal duty of participants. The JAD focuses on the business problem and not the technical details of systems design. The JAD shortens development time by gathering together the key personnel to define system requirements rather than using correspondence to query the field. A key JAD component is effective leadership development sessions that bring together the sometimes competing requirements of users and management. By bringing together key decision-makers, JAD can work through hidden agendas and conflicting interests, thereby again reducing development time.

Communications. Communications in CSS operations has always been a challenge. Communications, voice or data, below the brigade level is severely limited. The bridge to the Information Age at the tactical level needs to be constructed, but the solution is not readily apparent.

Data transfer today, below the brigade level, is conducted by "sneaker net." The "sneaker net" consists of passing data on diskettes between units, direct support units and their customers. In terms of business process, it is easy to see that better uses could be made of soldiers' time if data could be transferred directly between systems. The issue of data communications requirements below the brigade level is one that both CSS and Signal communities must work jointly. In terms of responsibilities, Army systems are developed within the oversights of proponents, such as medical systems-Medical Command, supply-USACASCOM and personnel-Personnel Command.

Although the systems and their operations are the responsibility of proponents, the transfer of data is the domain of the Signal community either through wire or wireless. Using wire communications is generally not considered viable because of requirements associated with maneuver. Wireless communications in its present architecture lacks sufficient "bandwidth" to meet CSS data transfer requirements. The inclusion of the Signal community in the early stages of GCSS-Army development in both the general officer working group and in JADs allows communications to be a functional piece of system design and not just an afterthought.

Integrating Army and Joint Systems. GCSS-Army in Phase III will interface with other Army systems that continue to serve (by necessity) a "stovepipe" function (finance, personnel, medical). Interfaces will be necessary to these systems, but their full integration may not be necessary to support primary logistics functions. Integrating GCSS-Army into joint systems, happily, will not require the invention of a bottom-to-top Department of Defense system. GCSS-Army in Phase III will interface with the Global Combat Support System. The Global Combat Support System is a joint information system that provides the full spectrum of information capabilities to the warfighter and the sustaining base. The Global Combat Support System will combine and fuse data from multiple input (all Department of Defense services) into data that provides warfighters with situational awareness information. GCSS-Army, in essence, serves as the Army input into the Global Combat Support System. GCSS-Army, in turn, will access joint data at the appropriate level.

GCSS-Army is a system whose time has come from both technological and organizational viewpoints. Computer technology is pervasive in our culture, and this necessarily produces computer literate recruits and soldiers. The maturity of computer technology and the level of computer literacy make fielding of modern systems far more practical than ever before. The modernization of business processes in light of technology and technique was inevitable. The initiative to update both information systems and business processes simultaneously can only give the Army a better way to support the soldier in the field.

LTC Thet-Shay Nyunt is assigned to the Information Systems Directorate, US Army Combined Arms Support Command, Fort Lee, Virginia.

STAMIS Connectivity: Technology Supporting 21st Century Tactics

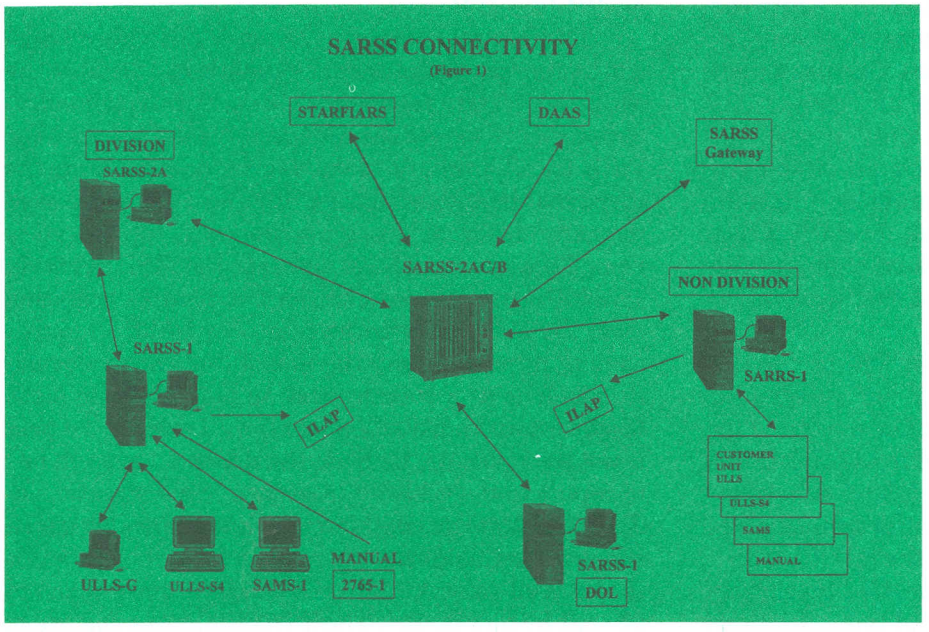
CPT Todd Bertulis *CPT David Kahanu* *CPT William McMillian*
CPT Juanita R. White *CPT Karen Wrancher* *LT Berkeley A. Baker*
LT Reolito G. Jao

The Army is experiencing drastic reductions in personnel and available funds while mission requirements are increasing. To meet these increasing demands, logisticians must become more efficient. Senior Army officials look to new management philosophies and infrastructure adjustments to enhance the Army's logistics performance. To support these initiatives, technicians are taking advantage of new communication technologies along with existing Standard Army Management Information Systems (STAMIS) to provide outstanding logistics support to the 21st Century battlefield.

The days of huge prescribed load list (PLL) stocks and authorized stockage lists (ASL) are coming to an end. To reduce cost and improve timeliness, it is important to examine the logistics pipeline and its components using Velocity Management philosophies.

Velocity Management is a methodology that defines, measures and improves existing procedures throughout the Army supply system. Its twofold goal is to eliminate steps that do not add value and to improve support to customer units. If implemented effectively, Velocity Management will produce a more flexible, efficient and responsive logistics support system that will ultimately get the right part to the right place at the right time. To maximize the effectiveness of supply activities, logisticians must reduce the following: order ship times, part requisition processing times, and receipt processing times. Units will order and receive parts more quickly and efficiently after logisticians decrease the time for a requisition to leave the Unit Level Logistics System (ULLS), arrive for processing at the Standard Army Retail Supply System (SARSS-1) site, and then go to the wholesale system.

Initiatives to streamline the Army's logistics system have resulted in technological advancements in STAMIS and communications technology. Decreasing the part retrieval process and expanding visibility of parts in stock enhance the logistics system. The key to continuous combat service support on the battlefield is proper use of the automation and communication technologies to reduce the amount of time that combat systems cannot perform missions. Once a deadlined vehicle is identified, PLL clerks must requisition Class IX (repair parts) immediately. Supply support activities (SSA) must receive requests, process them, and issue the items if available. If the items are not available, the requisition must be passed to the wholesale level. In garrison, this process involves existing telephone networks. Under field conditions, commercial phone networks are not available. Therefore, to pass requisitions to the wholesale level, soldiers must use a less technical means. The tracking of maintenance support, supply requisitions and valuable management tools depend upon the following STAMIS: ULLS, SARSS, Standard Army Maintenance System (SAMS) and the Integrated Logistics Analysis Program (ILAP). (See Figure 1 for a STAMIS diagram.)



Located at the unit level, ULLS is the initial STAMIS in the logistics pipeline. ULLS consists of the following three

subsystems: ULLS-G (Ground), ULLS-S4 (Supply), and ULLS-A (Aviation). ULLS-G automates unit-level maintenance, Class IX (repair parts) supply requisitioning, expenditure reporting, and the Army Materiel Status System (AMSS). These functions provide the commander real-time unit maintenance information. ULLS-S4 automates unit level supply and logistics staff operations. The system consists of supply requisitioning, property accountability, budget management, and logistics planning estimates to provide the commander with real-time asset visibility. ULLS-A performs the same functions as ULLS-G, except it is used for Army aircraft.

At the retail-level SSA, SARSS-1 is the standard supply system for accountability, receipts, issues, replenishment and storage operations. It is a real-time, transaction-oriented system where users can interactively enter, retrieve and update supply information. SARSS-2A is a standard supply system that manages stockage levels, referrals, replenishment and storage operations at the SARSS-1 level.

SAMS is a multilevel maintenance and readiness management system. It provides automated forecasting, distribution, scheduling and production control of maintenance workloads associated with operational readiness.

What Is ILAP?

The ILAP is a database that serves as a manager's tool to check the status of requisitions, maintenance data, financial transactions and document history. The ILAP is only as accurate as the SARSS-1 information input. Each SARSS-1 site has a daily requirement to send vital information to update the database. Several files hold information necessary for managers to perform their duties. The document history file contains the history of all requisitions processed at a respective SARSS-1 site. The due-out status file contains the due-outs for all supported customers. The stock status file provides information on the current stockage listing for each direct support unit (DSU). Finally, the transaction-out file provides information on transactions that have taken place at the respective DSUs.

Initially, STAMIS operators worked under the assumption that the performance of one system did not affect the performance of another system. Operators believed the performance of the ULLS-G did not affect the performance of the SARSS-1 site. However, the SARSS-2 site depends on information received from the SARSS-1 site, and the SARSS-1 site relies upon the data received from ULLS. Consequently, poor performance or delayed requisitioning at one system degrades the performance at the next site and also the overall performance and effectiveness of the entire logistics system. If logisticians at each level of supply have a basic understanding of how these systems interrelate, they will be more capable of utilizing the system to receive supplies. Understanding the capabilities of these STAMIS and how they relate effectively enables leaders to capitalize upon advancements in communications technology.

Innovations in communications allow the Army to pass and receive data faster and more efficiently. STAMIS now can pass data electronically instead of using magnetic media diskettes requiring physical delivery. The evolution of the Mobile Subscriber Equipment (MSE) Network, operated by the Signal Corps, enables logisticians to transmit logistics data. For the communication link to flow effectively, several key signal devices must be used to ensure connectivity. One of these devices is the wireless modem. The wireless modem is connected to a computer and transmits data using a high-frequency antenna. The wireless modem has an effective transmission range of about three to five kilometers, depending upon terrain. This modem eliminates the use of wire, providing more flexible communication to units relocating throughout the battlefield. The wireless modem can be used anywhere on the battlefield. However, it produces the best results when used within the forward logistics element (FLE). The wireless modem eliminates the use of the Signal battalion's assets and provides the ability to requisition supplies electronically instead of taking the requisitions to the brigade support area (BSA).

What Is TTA?

The Tactical Terminal Adapter (TTA) is a tactical telephone with modem capabilities. It uses the MSE network to transmit voice and data communications over long distances using satellite signals. With this hardware, data can be passed from the corps rear boundary to the FSB. The TTA can be used in many different areas as long as a signal van is near. This van must have access to the MSE network. The MSE network can be used to pass information from the BSA to the corps rear. The SARSS requisitioning process allows the use of real-time information as long as a communication network is in place for data transmission. As mentioned earlier, if a part is not available at the SSA, the SARSS-1 system has to report to the SARSS-2A system via magnetic media (diskettes) or commercial phone lines. In garrison, commercial phone lines are available. However, in the field they are not and the information has to be sent by messenger. The TTA eliminates the use of

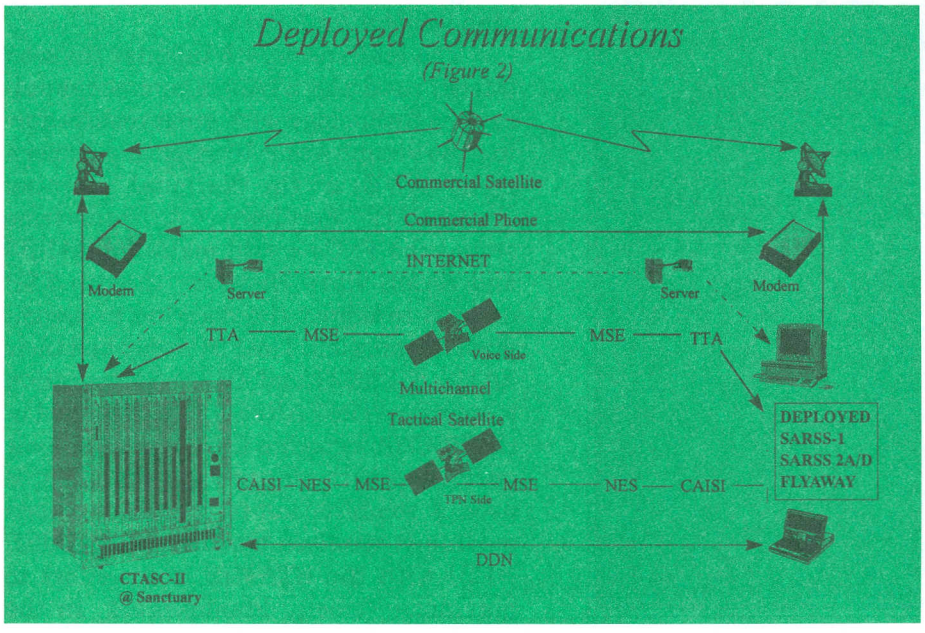
the messenger and uses the MSE network to pass the information over great distances in less time.

The development of the Combat Service Support Automation Information Systems Interface (CAISI) is one of the best improvements in Army communications. The mission of the CAISI is to provide commanders and managers with an automated information system interface between combined service support STAMIS and the Army's tactical communications systems. The interface is necessary to provide older fielded systems with a communication link to the current STAMIS operating on the MSE network. It also provides the ability to connect multiple STAMIS to one communications device. The CAISI will allow STAMIS users to transfer their data files by creating a virtual circuit between two work stations across the network. STAMIS will physically connect to the CAISI device either by hardwire or through a dial-in circuit. The CAISI is best used when located in the BSA, the division rear, and corps rear areas. The CAISI provides Local Area Network (LAN) technology to STAMIS in the field and to those STAMIS that do not possess network capability (such as SAMS). With this ability, STAMIS can have a continuous connection to other systems and pass information without the use of modem technology. The CAISI possess LAN technology that allows the immediate transmission of data to any system on the battlefield connected to another CAISI. The CAISI can also provide access to the computer Internet.

The MSE network is classified. The Signal community has devised a method to pass unclassified data on the network using the Network Encryption System (NES). The NES is a device that can separate the network into classified and unclassified segments. The NES uses the Internet Protocol (IP) addressing system within the CAISI hardware to pass data through the unclassified segment of the MSE Network.

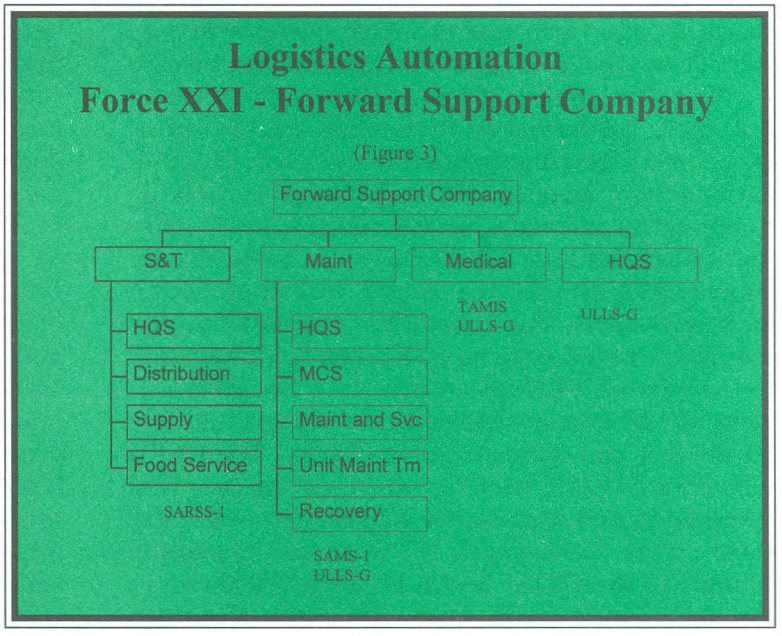
TCP/IP (Transmission Control Protocol/Internet Protocol) is a networking protocol. A protocol is a set of rules that all companies and software products must follow to make their products compatible with each other. This protocol defines how software communicates with other software. The TCP/IP allows users to send large quantities of data in a compressed format. TCP/IP also enables the transmission of data to a single user or a specified number of users. Before the invention of TCP/IP and CAISI capabilities, logisticians were limited in the locations where they could send and receive data within a field environment. TCP/IP coupled with the CAISI enables logisticians to pass information to multiple users anywhere in the world in a matter of seconds by taking advantage of the Internet. The advances in communications technology, connected with the STAMIS, have allowed the Army and the logistics community to pass large quantities of information quicker and farther than any other time in Army history. (For a deployed communications diagram, see Figure 2.) These initiatives to streamline the Army logistics system have resulted in the introduction of a new concept known as Task Force XXI.

Under Task Force XXI, senior Army officials restructured units within divisions to relieve maneuver unit commanders of organic logistics and maintenance support elements. This new concept places all support under the control of the division support command (DISCOM). The first phase of this doctrinal change will be implemented within a brigade-sized task force. The forward support battalion (FSB) within the brigade will assume all logistics support in the form of forward support companies (FSCs). The concept removes the headquarters and headquarters companies (HHC) in the maneuver battalions where the logistics and maintenance operations occur. Now

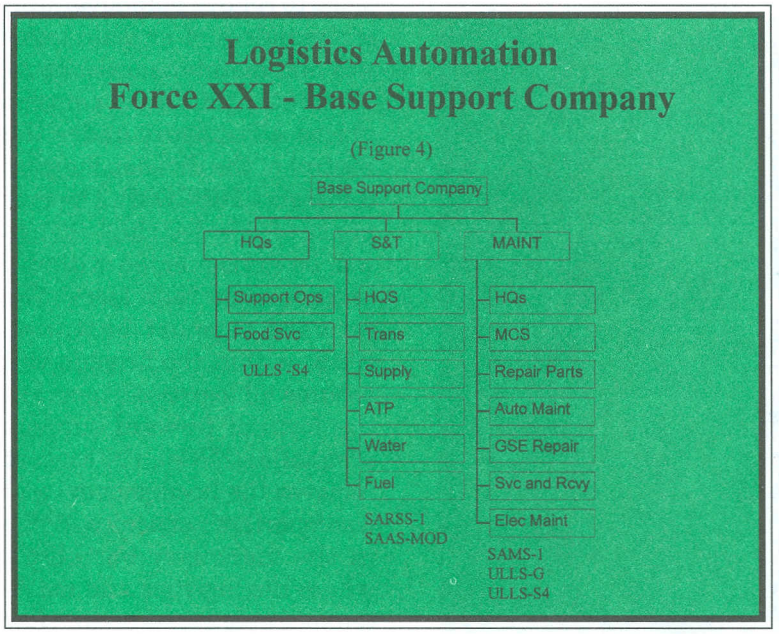


the FSB has three additional companies: one Armor FSC and two mechanized (Mech) FSC.

The FSC will perform the following functions: organizational (Org) and direct support (DS) maintenance, receipt and issue of supplies, food service, medical support, transportation support, PLL maintenance, and command and control (C2) for assigned and attached units. Under this new concept, two STAMIS per company will move forward on the battlefield. The concept states that each FSC will maintain a SARSS-1 site for the receipt and issue of supplies and a SAMS-1 site for DS maintenance. These are in addition to its ULLS-G and ULLS-S4 operations. (See Figure 3.) This change in force structure provides the maneuver unit commanders with the ability to have logistics systems, such as SARSS and SAMS, closer to the Forward Line of Own Troops (FLOT). Logistics support is improved because the logisticians are constantly involved with the maneuver units and can relay combat requirements quickly.



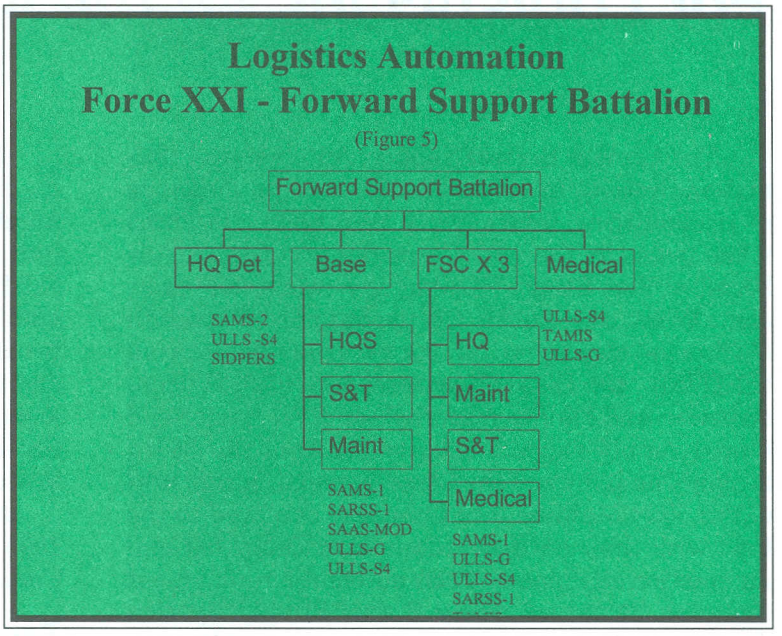
In addition to the creation of the FSCs, the maintenance company in the FSB will become the base support company (BSC). The BSC's mission will remain the same: to provide DS to a designated maneuver brigade and divisional elements operating in the BSA. However, the BSC will have the capability to order Class V (ammunition) by moving the Standard Army Ammunition System-Modernization (SAAS-MOD) STAMIS into the BSA (See Figure 4. For the complete layout of the FSB, see Figure 5.) The second phase of Force XXI is called Division XXI. This phase will implement these changes throughout the entire DISCOM. Doctrine without good equipment systems and well-trained personnel to support it would be inadequate. These changes in doctrine rely on the use of technological advancements to maximize logistics support on the battlefield. During a recent training exercise, existing STAMIS and new communication technology were employed using Task Force XXI doctrine and Velocity Management initiatives.



The 1st Brigade, 4th Infantry Division (Mech) used the STAMIS and communications technology with great results during the recent Army Warfighting Experiment (AWE) at the National Training Center (NTC), Fort Irwin, CA. The doctrine stated the FSCs would maintain SARSS and SAMS sites. However, the 4th FSB decided to adjust the doctrine to accomplish the mission. The FSCs only had their SAMS, ULLS-G and ULLS-S4 operation to manage. The SARSS-1 site remained in the BSC. To expedite the Class IX (repair parts) requisitioning process, the 4th FSB used a combination of communications mediums (wireless modems, and CAISI/NES) with the STAMIS in an effort to maximize Velocity Management. In the

BSA, each ULLS-G and SAMS-1 computer was outfitted with a wireless modem. The SARSS-1 and SAMS-2 systems were connected to a wireless modem and to the CAISI. Also, another personal computer was connected to a CAISI for the transfer of the ILAP files. In the division support area (DSA), the SARSS-2A was also connected to a CAISI along with a personal computer for ILAP capabilities. With this configuration, the 4th FSB passed Class IX requisitions from the maneuver area to the rear area 20 miles away using the MSE network. This reduced requisition processing time by eliminating the human intervention of passing requisitions from point to point on diskette.

As the Army moves closer to the 21st Century, the impact of budget constraints and personnel reductions will force logisticians to spend money wisely and use available technology to maximize the existing supply system. STAMIS connectivity on the battlefield enables logisticians to excel under such constraints. Using STAMIS and communication systems, Velocity Management philosophies, and Task Force XXI doctrine, logisticians will be able to sustain the fight throughout the 21st century.



The authors are Quartermaster graduates of the Combined Logistics Officer Advanced Course 97-5/6.

LEGEND for All Figures

ATP – Ammunition transfer point
AUTO – Automotive
CAISI – Combat Service Support Automation Information Systems Interface
CTASC – Corps/Theater Automatic Data Processing Service Center
DAAS – Defense Automated Addressing System
DDN – Defense Data Network
DET – Detachment
DIV – Division
DOL – Directorate of Logistics
ELEC – Electrical
FSC – Forward support company
GSE – Ground support equipment
HQ – Headquarters
HQS – Headquarters
ILAP – Integrated Logistics Analysis Program
MAINT – Maintenance
MCS – Maneuver Control System
MSE – Mobile subscriber equipment
NES – Network Encryption System
OPS – Operations
RCVY – Recovery
S&T – Supply and transportation
SAAS–MOD – Standard Army Ammunition System – Modernization
SAMS – Standard Army Maintenance System
SARSS – Standard Army Retail Supply System
SIDPERS – Standard Installation/Division Personnel System
STARFIARS – Standard Army Financial Inventory Accounting and Reporting System
SVC – Service
TAMIS – Training Ammunition Management System
TM – Team
TPN – Tactical Packet Network
TRANS – Transportation
TTA – Tactical Terminal Adapter
ULLS – Unit Level Logistics System

The Challenge of Data Transfer For Logisticians on the Modern Battlefield

CPT William Willis III

The Combat Service Support Automation Information Systems Interface (CAISI) met the challenge of transmitting information over great distances when tested by the 46th Corps Support Group (Airborne) at Fort Bragg, NC, during a recent field exercise. When the 264th Corps Support Battalion (Airborne) deployed for its external evaluation (EXEVAL), the Class II (general supplies), IV (construction and barrier materiel), and VII (major end items) supply support activity (SSA) of the 364th Supply Company and the Class IX (repair parts) SSA of the 503d Maintenance Company deployed to the field with their entire authorized stockage list and automation equipment. Their automation equipment included Standard Army Retail Supply System (SARSS-1), Materiel Release Order Control System (MROCS) and CAISI as part of the 264th Corps Support Battalion EXEVAL. The CAISI test's goals were twofold: to verify the ability of the SSAs to transmit data between the field site and the 2d Corps Materiel Management Center in the rear garrison and to meet the battalion commander's training objective of successfully transferring data over mobile subscriber equipment (MSE) to a garrison location.

The logistics community has long needed a faster, reliable method of sending information over long distances. As the Army moves into the 21st Century, its ability to send information – whether supply requisitions, maintenance requests, or personnel transactions – is paramount. From the beginning, Standard Army Management Information Systems (STAMIS) have relied on soldiers to physically transfer data from one system to another by use of disks. This practice is called the "sneaker net." Soldiers needed a better method of data transfer, so CAISI was developed.

Origin of the CAISI

The following excerpt from the CAISI doctrine memorandum written by the Army's software systems contractor explains the CAISI's origin:

In response to the lessons learned in *Operation Desert Storm*, a capability was developed which provided commanders and managers with an automated information system interface between combat service support (CSS) STAMIS and the Army's tactical communications systems, primarily the Tactical Packet Network (TPN) component of the MSE. This effort was necessary to reduce the need for 'sneaker net' data transfer on the battlefield. . . .

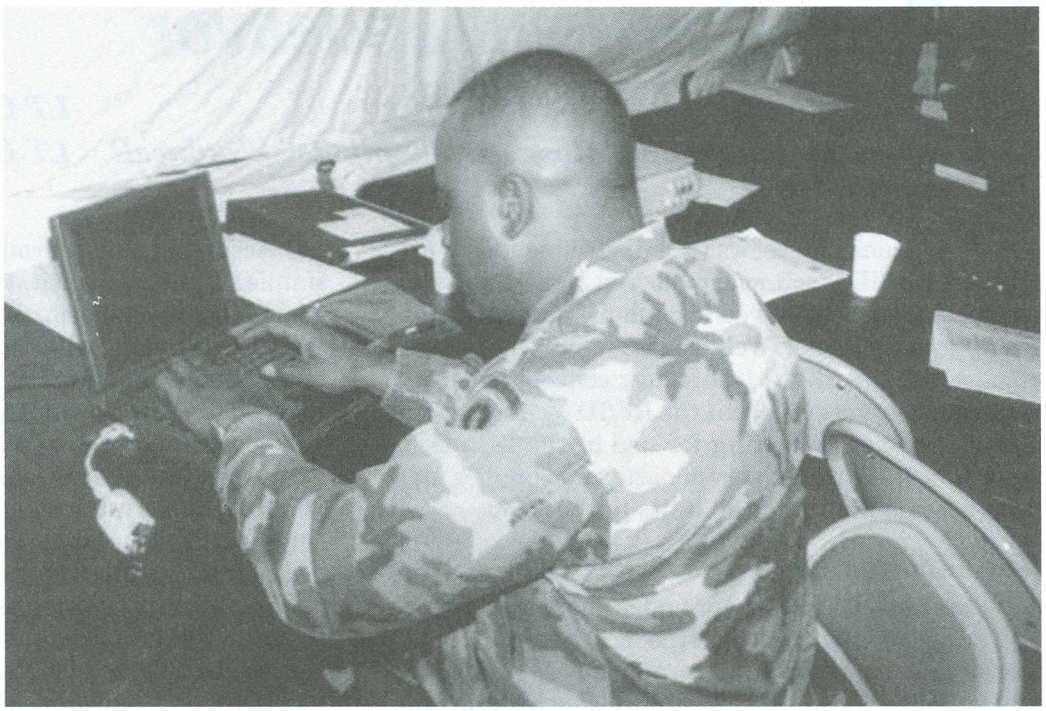
An interface device was necessary to consolidate the large number of CSS systems into the limited number of ports available on the MSE network. This initial capability was known as the Near Term Fix (NTF) or the concentrator. Between September 1992 and January 1994, 39 NTF concentrators were fielded to the XVIII Airborne Corps, its subordinate divisions, and the 1st Cavalry Division. The NTF met the immediate requirement to provide an interface for the CSS automation community to the Army's primary tactical communications system, the MSE packet network. . . . [A midterm CAISI] began development in January 1994 and is currently being fielded to XVIII Airborne Corps units as a replacement for the Near Term Fix.

Early Challenges

Before the field exercise, the 46th Corps Support Group (Airborne) conducted a communications exercise (COMMEX) 11–13 Feb 97 to test the abilities of the CAISI before the EXEVAL. During this COMMEX, several problems were identified. Many key elements needed to make the CAISI system work were not present during the COMMEX, most notably the domain name server (DNS). Stated simply, the DNS is the "glue" that holds the network together. The DNS allows for rapid transmission and routing of data within a network. The absence of a DNS is not unlike a mailman carrying mail with no addresses or zip codes and no way to obtain the information. After the COMMEX, an after action review (AAR) identified the missing pieces before planning to correct the problem.

After the AAR, the 46th Corps Support Group's combat service support automation management officer (CSSAMO) went to the offices of the Army's contractor to learn more about the CAISI. During the two-day training period, the CSSAMO learned how to set up the CAISI and Network Encryption System (NES), register and deregister STAMIS systems through the CAISI, and the setup and operation of the DNS computer and software. Upon return to Fort Bragg, a mini COMMEX or "rock drill" was conducted in the CSSAMO's office at 46th Corps Support Group. A contractor's representative and personnel from the 35th Signal Brigade, the two SSAs, 2d Materiel Management Center (MMC), and the Logistics Automation Systems Support Office were present for "rock drills." A network was established with two CAISI devices and the DNS computer. Soldiers from the

MMC and SSAs were allowed to practice registering their STAMIS computers with the CAISI and transferring files. The "rock drill" was a huge success and paid big dividends when the group actually deployed to the field. Because the personnel became comfortable with the system in both its setup and operation, the only problems faced in the field were those associated with the ability of the network to stay up. Various problems arose within the network as a result of marginal radio "shots" between sites. When the network finally became stable, the system worked better than expected.



Data Transfer During EXEVAL

During the test, more than 100 files were sent and received during a three-day period. Both SSAs (503d and 364th) sent and received files from the corps materiel management center (Corps/Theater Automatic Data Professing (ADP) Service Center). The SSAs received a total of 107 files from the 2AC computer and sent a total of 59 files as of 20 Mar 97. In addition, both SSAs sent and received files among themselves. We were able to "telenet" to various sites in the Not Classified But Sensitive Internet Protocol Router Network (NIPRNET) that formerly was MILNET to include Fort Campbell, KY, and the contractor in Fairfax, VA. We sent E-mail messages using the EMH4 and EMH1 servers at Fort Campbell. The CSSAMO also talked keyboard to keyboard with personnel from the 101st Corps Support Group. We connected the "flyaway box" from the materiel management team (2d Corps Materiel Management Center) and were able to connect to the support center through the network. A successful videoconference session between the 46th Corps Support Group tactical operations center and the 364th SSA site was held.

The group CSSAMO was able to continually monitor the status of the network through a computer program. With this program, a user can create a graphic outline of the network showing the various users. This program is an excellent tool, especially for CSSAMO personnel tasked with monitoring the system. All personnel involved in the test were very pleased with the results. The CAISI worked well for passing data, not only for SARSS, but also all other STAMIS systems. As STAMIS systems evolve, more network connectivity will take place between systems to allow logisticians an unparalleled ability to pass information and meet the needs of the combat force.

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Radio Frequency Identification Technology In Operation Joint Endeavor

CPT Gary A. Martin *LT Todd M. Bair* *LT C. Scott Norton*
LT Matthew B. Reedy *LT Rosalyn Thompson-Blackwell* *LT Barbara M. Wagner*

When someone refers to radio frequency identification (RF/ID) technology, do you have a puzzled look on your face? Are you lost when Total Asset Visibility is mentioned? Well, continue to read and become familiar with the technology, concept and some real-life observations about the RF/ID technology the Army is currently testing for use in the 21st Century. Just-In-Time delivery of parts and supplies may soon become reality for all units in the Army.

The Technology

Total Asset Visibility provides users with timely and accurate information on the location, movement, status and identity of units, personnel, equipment and supplies. Total Asset Visibility also includes the capability to act upon that information to improve overall performance of practices. This factory-to-foxhole concept allows managers and leaders alike to track supplies through different types of automation. RF/ID technology plays an important part.

There is a significant difference between RF identification and RF data communication. RF identification begins with the use of some components that may be unfamiliar: the RF tag, the hand-held interrogator, the fixed interrogator, the "burn station," and the fusion center.

The RF/ID tag is a device attached to an item for tracking while in transit. The tag has read/write memory, radio transmitter and receiver abilities, and provides omnidirectional communication capabilities. The bottom line: this tag has the capacity to store about 50 pages of text for retrieval up to 300 feet away, and each tag has its own identification number to assist in tracking.

By using the hand-held or fixed interrogator, users can retrieve information about supplies and equipment from RF/ID tags. Both items have omnidirectional communication capabilities and the ability to access information on several tags at once. The difference between the two interrogators is that the hand-held is exactly that, hand-held, while the fixed interrogator is designed for use in permanent and semipermanent facilities. The fixed interrogator also requires a host computer to view and store the information, but the handheld interrogator has its own screen and memory.

Accessing the information from the RF tags is simple. While in transit, the RF tags are in a "sleep mode" (inactive), which conserves battery power. The tag is "awakened" when it passes a fixed interrogator or someone queries it with a hand-held interrogator. This allows the interrogator to collect the information required at that time. At a "choke point" (discussed in more detail later) the fixed interrogator will simply relay the fact that the tag (and the shipment) has been at that location. Once the tag arrives at a critical hub, leaders and managers need to know about the contents. They can access this information with a hand-held interrogator or a fixed interrogator if one is installed at that location.

Imagine the volume of tags that the Army can use. These tags are written to and read from a location called the "burn station." A "burn station" is a personal computer with special software and a modem or satellite transmitter and a fixed interrogator attached to it. The information about the shipment is entered into the "burn station" computer. Then information is loaded or "burned" onto the tag, either through the fixed interrogator or through the use of a tag "docking station." A "docking station" is a piece of hardware with an interface connection that allows tags to receive information from another computer system, the Automated Manifest System.

The information written to a tag at the "burn station" is critical for visibility in transit. At this point, via modem or satellite up-link, line-item data is sent from the "burn station" to the fusion center.

The fusion center is the central database for storing all shipment information. Fixed interrogation sites also upload movement data in transit to the fusion center. The primary fusion center is located in Cambridge, MA, and is operated by the US Department of Transportation. The fusion center in Cambridge interfaces with a fusion center operated by the Logistics Support Agency (LOGSA) in Huntsville, AL. Any soldier with Total Asset Visibility software and access authorization can view the information at the fusion center. Also, US Army Europe (USAREUR) operates an Internet web page that personnel can use to get information on shipments for or in Europe.

Another integral part of RF/ID technology is the Automated Manifest System. It is a hardware and

software system designed to automate the preparation of Transportation Control Movement Documents (TCMD) and manifest information, as well as shipment receipt processing. The Automated Manifest System hardware includes a computer, an optical memory card reader/writer (OCR), bar code readers, an RF/ID tag "docking station," and a printer. The Automated Manifest System computer, via cable interface with the Standard Army Retail Supply System-Level 1 (SARSS-1), compiles all shipment data. This data can be written to an RF/ID tag through the "docking station" and downloaded to diskette for interface with the RF/ID "burn station" and/or written to an optical memory card by the OCR. The optical memory card, similar to a compact disk-read only memory (CD-ROM) or floppy diskette in function (but much more durable), can be used as a backup for RF/ID tags. The Automated Manifest System allows "burning" the actual TCMD with all line item data to the tags and then transmitting to the fusion center once transferred by diskette to the "burn station."

The Concept

To demonstrate the purpose of Automated Manifest System and RF/ID technology in *Operation Joint Endeavor*, we will track a shipment from the Defense Distribution Center, Susquehanna in New Cumberland, PA, to a receiving supply support activity (SSA) in Bosnia. Once a container or 463L ALOC pallet (a pallet used for air shipments) is filled at the depot, both a consolidated Automated Manifest System card and an RF/ID tag are attached to it. New Cumberland then sends all the line item information (such as national stock number, quantity and document number) and the RF/ID tag serial number to the fusion center from their "burn station." The shipment is now ready to depart.

After leaving the depot, the container arrives at the air point of embarkation or sea point of embarkation (APOE/SPOE), where a fixed interrogator detects the RF/ID tag and alerts the fusion center to the container's arrival. The container leaves the APOE/SPOE and arrives at another APOE/SPOE, where another fixed interrogator tracks the shipment. Fixed interrogators are placed at key points (often referred to as "choke points") along the route to Bosnia, including the transportation hub at Kaiserslautern, Germany; the US post at Kaposvar, Hungary; the Sava bridge in Croatia and the receiving SSA. These interrogators effectively report the progress of shipments so units can track the container to its final destination.

The SSA is equipped with a SARSS-1 computer, Automated Manifest System, RF/ID "burn station," fixed interrogator, and several hand-held interrogators. Once a container arrives, SSA personnel download and process the supplies for receipt into their SARSS-1 system. With the Automated Manifest System, the soldiers have the option of simply reading the Automated Manifest System optical memory card and performing a batch receipt of all items with a few simple keystrokes, or soldiers can process each item from the shipment using portable data collection devices (PDCD) of the SARSS-1 system. The PDCDs use radio frequency to transmit receipt data (such as national stock number, quantity and document number) directly to the SARSS-1 computer. The soldiers can process all receipts interactively right on the SSA's receiving docks! Also, using the hand-held interrogator, SSA personnel can read the RF/ID tags on containers awaiting processing to identify the contents. This is especially useful when customers are awaiting critical supplies or repair parts for the SSA to quickly locate, process and ship those items. When the SSA needs to ship equipment to any other location, the SSA can generate optical memory cards and RF/ID tags and then transmit all shipment data to the fusion center, just like the continental US depot. This allows senior leadership to track supplies to, within, and out of the theater of operations.

The Reality

We have explained the intent of RF/ID technology from a technical point of view and demonstrated how it works conceptually. Now we will give some observations on the effectiveness of RF/ID technology in Hungary and Bosnia during deployment to and sustainment operations in *Operation Joint Endeavor*. These observations are written from the perspective of a main support battalion SSA officer and S4 deployed in Lukavac, Bosnia, and an S4 from the intermediate staging base (ISB) in Kaposvar, Hungary. We had hands-on experience with the technology on the ground. We will identify shortcomings we observed, improvements already made or that are in progress, and our ideas for more improvements.

Deployment

Operation Joint Endeavor was the first time RF/ID technology was used in a large-scale deployment. It was fielded to the 1st Armored Division less than six months before the deployment and one month before deployment for the ISB. The technology improved the information flow and visibility of unit equipment during deployment and of incoming sup-

plies during sustainment. Sometimes, though, expectations for the technology exceeded the reality. The full potential of RF/ID technology was not always used because of lack of training and equipment or shortcomings with the equipment.

When the 1st Armored Division deployed, units used 20-foot military-owned demountable containers (MILVANs) to ship equipment. All MILVANs had RF/ID tags. Many units used more MILVAN containers than had been anticipated, and so these units also needed more tags. The number of "burn stations" was insufficient to support the operational needs. Units had to go to other "burn stations" such as the one in Heidelberg, Germany, to get tags burned. This solved the problem, but was time and manpower intensive. This problem has already been addressed by fielding more "burn stations" in units in the division.

Problems With Tags

At the trailer transfer points and container holding yards between Hungary and Bosnia, RF/ID technology helped to identify containers but was limited by many factors. Many tags were crushed during transport because containers were loaded end-to-end on train cars or 40-foot trailers. Since the standard operating procedure was to put tags on the doors of the containers without any protection, the tags were crushed when the two containers were pushed together during loading or unloading. Some tags were stolen by local children for souvenirs. Some fell off when the plastic strips frequently used to hold the tags became brittle from the cold and broke.

According to the Defense Logistics Agency (DLA) Operations Support Office, DLA's focal point for Automated Identification Technology (AIT), tags are already being improved to make them smaller and more sturdy. DLA also has considered modifying containers with slots on the container doors to hold the tags. This could be cost-prohibitive, however, because most MILVANs are leased and not owned by the government.

Once containers came to holding yards, often soldiers did not have interrogators to query incoming tags. If the soldiers did, they frequently were not trained to use them. Units passing through did not always know what key information was needed for interrogating the containers. Many units resorted to the old-fashioned spray-paint method. Once these units reunited with their containers in Hungary or at any other point (after rail transportation), soldiers would spray-paint unit designation on all four sides. This was a step that was not taken before deployment because units believed that the RF/ID tags would provide better visibility than spray-paint. Soldiers still relied more on paper copies of manifests prepared in the rear to discover what was in MILVANs rather than on RF/ID tags. The availability of hand-held interrogators improved during the deployment. Allowing units to keep the interrogators should help solve the problem.

During deployment, choke points had not been fully established in theater, so tracking a "lost" container was often difficult. When choke points were set up, there was still some confusion because the choke points were not all named so that soldiers could recognize their locations. Sometimes, units knew what choke point a container had recently passed, but had no idea where that choke point was. For instance, one of the choke points in Lukavac was named "Kaiserslautern Gate 1" for a while because the equipment had been brought from Germany, but the choke point had not been updated to reflect its new location.

Choke points must be established in theater as early as possible, even if they must be relocated later as main supply routes change. Choke point interrogators should have descriptive names that units can recognize so they can effectively track materiel.

Sustainment

During sustainment, most supplies coming into the division warehouses were tagged. The RF/ID tags on incoming shipments survived much better than those that had been on MILVANs during deployment. Less than 10 percent of tags were damaged, lost or had battery failure. MILVANs of supplies coming into theater were most often brought by palletized load system (PLS) trucks. A PLS truck transports only one MILVAN, so tags are not crushed between two MILVANs being loaded on one trailer, as tags were during deployment. Also, tags coming in on trailers from Germany (the Eagle Express) and air pallets from the United States usually arrived in good condition. Visibility of incoming supplies was very good, once units knew about the availability of the information on the computer Internet.

Visibility and reliability were somewhat weakened because of problems once shipments reached Bosnia. Sometimes tags were not removed from trailers or MILVANs when they arrived at an SSA. Therefore, units would "see" (on Total Asset Visibility or the Internet) their supplies returning to Germany, but actually the supplies had been downloaded. Only an empty trailer and a tag were going back to Germany. SSAs would reuse the tags. However, because of training and hardware deficiencies, some tags

would have new information written to them, but the new information was not forwarded to the fusion center. This had the same effect as tags not removed from trailers or MILVANs: units saw supplies returning to Germany or going to other places in theater when in reality the supplies were at their destinations.

Greatest Challenge

The biggest challenge for SSAs using RF/ID technology in Bosnia was the lack of integration of all the warehouse automation systems. To prepare a shipment of serviceable or unserviceable excess for retrograde, soldiers used SARSS-1 to prepare turn-in documents. They then scanned the documents and input the information into the Automated Manifest System to produce a TCMD hardcopy and to burn the tag (once the Savi docking station was fielded to allow this). Finally, soldiers had to input the same information into the "burn station" so that it would be transmitted to the fusion center, since the Automated Manifest System did not have communication capabilities to send the information directly. Initially, the input was through the keyboard. This meant less information was sent to the fusion center than was actually on the tag because it was too time-intensive to retype all the line-item information into the "burn station." Later, SSAs were able to transfer the information on a floppy disk from the Automated Manifest System to the "burn station," but this was done through disk operating system (DOS) and was a very complicated process.

As the operation progressed, the ability of the SSAs to properly burn tags for retrograde improved greatly thanks to training they received from the contractors, USAREUR Deputy Chief of Staff for Logistics, and other outside agencies, as well as the continually improving software and hardware. The TCMD function of Automated Manifest System and the Savi docking station that hooked directly to the Automated Manifest System were the two most important improvements. However, the communication between SARSS, Automated Manifest System, and the "burn station" is the critical step in making the technology a time-saver rather than an additional burden to the SSAs. This improved integration is happening in units now.

Hand-held interrogators were available at the SSAs, but were frequently not used unless the warehouse had a large backlog of supplies to process. When this was the case, the interrogators were extremely useful in identifying high-priority shipments for expedited handling. Soldiers were able to work smarter, and item managers were able to get the supplies that their customers really needed.

Two other concerns with tags were availability and handling. The number of tags was limited. SSAs sometimes stockpiled the tags because a retrograde system and accountability for tags were not well established. Also, batteries in tags had to be turned over once they arrived at their destination. If batteries were not flipped as a tag passed choke points enroute to Germany, units perceived that their supplies were returning to Germany although the shipment had been downloaded at its destination. Batteries were limited. The standard operating procedure was to use a new battery every time a tag was reused to ensure that the battery was good. A tester for the batteries would save a lot of money. The life of the batteries was generally long, and they could have been reused if the confidence in their charge had been there. A new tag is also being developed that would use AA batteries instead of the special flat batteries in use. This should make batteries more accessible and cheaper.

Many Savings

RF/ID technology is rapidly evolving. Soldiers in *Operation Joint Endeavor* saw many improvements in the short time they were deployed. The technology helped soldiers on the ground in units and in the SSAs. It let managers at the materiel management centers and units better manage supplies. RF/ID technology saved time and money.

To be truly successful in the future, however, this technology must be fully integrated with the other automation systems that warehouses are using. Standard procedures must be developed to eliminate the roundabout methods of information transfer. Soldiers must be trained in this technology during advanced individual training so they are familiar with the concepts and the importance of this technology in making their work easier. We have a powerful tool at our fingertips. We only need to fully realize and exploit RF/ID potential.

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Smart Cards: Big-Time Punch in a Byte-Sized Package

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The future of logistics automated management is here today in the form of card technology. Imagine being able to track personnel and supplies with the use of a small plastic card. Imagine being able to access financial, personnel and medical records with this card. Imagine being able to access information that would give in-transit visibility of materiel and supplies. Well, smart cards can offer all that.

Smart cards are subdivided into two basic groups: these are *chip cards*, commonly referred to as smart cards, and *laser optical cards*. The main difference between these two cards is that *chip cards* are memory cards with artificial intelligence capability, while *laser optical cards* support "write-once-read-many-times-over" technology.

Changes in Card Technology

Card technology falls into three basic categories: *financial, controlled access*, and *identification* cards. Card technology, originally developed in the early 20th Century, has gone through several changes to arrive at the current smart card design. From 1930 to the 1970s, the old metal "charge-a-plate" was the forerunner to the plastic charge cards in use today. From 1970 to 1973, the American National Standards Institute/International Standards Organization (ANSI/ISO) standardized the plastic credit card and also introduced the first standard for machine-readable cards: magnetic stripes.

The 1980s brought further advancement to the magnetic stripe card. During this time, financial-type cards took off with the advent of debit cards, prepaid telephone cards and cash cards. The success of these types of magnetic stripe cards set the stage for a single card that can perform all three functions: financial, controlled access and identification.

The private sector developed such an all-purpose card to eliminate the use of various, single transaction cards. The Department of Defense (DOD) began developing its own multi-use cards in the early 1970s. This technology is now available in the Multi-technology Automated Reader Card (MARC), which is an example of a chip card, and in the Optical Memory Card, which is an example of a laser optical card. Both cards will increase the effectiveness of the Army's overall logistics tracking capability.

The MARC is a portable, credit card-sized "smart card" capable of storing and updating personnel data on a particular service member or DOD employee. The MARC utilizes a magnetic stripe, a two-kilobyte (2KB) integrated circuit (IC) chip, and a bar code to update and store data. It holds printed information (including a digital photograph), embossed name and social security number. The combination of all of this makes the MARC card versatile. It can interface with a variety of technologies and systems, from imprinting machines to computer systems that use IC chips as data carriers.

The DOD designed the MARC program in response to the many single use, updatable technology programs throughout the DOD. The MARC program is responsible for evaluating the concept of providing a multifunctional, cross-service utility card that satisfies multiple requirements within the DOD for a portable, updatable medium.

The MARC program has three primary objectives:

- Reduce the proliferation of single use, nonstandard automated cards.
- Examine options for satisfying unmet requirements for updatable information on a portable medium.
- Provide a technology that bridges the gap between incompatible information systems.

The MARC program applies and tests these objectives against field medical care, mobilization and readiness processing, manifesting, food services operations, a composite health care system, and the Transportation Command (TRANSCOM) Regulating and Command and Control Evacuation System (TRANC2ES).

The MARC holds data important for soldier readiness, processing, manifesting, personnel accountability, combat medical and dental treatment, battlefield casualty pay documentation and the information to support the approved battlefield functions. The soldier readiness card was developed to interact with standard commercial equipment in order to reduce cost and development time.

The MARC was approved and funded by the DOD. The DOD wanted to evaluate the MARC as a prototype system to be used in the following manner:

- **Field Medical Documentation** to access the ability of the MARC IC chip to record, revise and transfer medical treatment data across echelons of care in the field for both mass casualty and field outpatient treatment.
- **Mobility/Readiness Processing** to evaluate the use of the MARC IC chip to store readiness information such as soldier's personal, legal, medical and other data that must be current before deployment.
- **Manifesting** to access the use of the MARC bar code to create real-time manifest records of military personnel as they board and disembark from aircraft or ships.
- **Accountability** to test real-time accountability.
- **Food Service Head Count** to evaluate the magnetic stripe on the MARC in order to replace the current paper meal card, as well as the automated collecting and reporting of meal head count data and the ability for the diner to pay by payroll deduction.

MARC in Action (Hawaii)

The MARC was successfully tested November 1993–February 1994 in a company at Fort Bragg, NC. The cards' success at the initial site led to further testing in Hawaii. The card was distributed throughout the 25th Infantry Division (Light), US Army Hawaii (USARHAW), 45th Support Group and the 703d Military Intelligence Brigade in October 1994.

The MARC was put to the "real test" during the January 1995 deployment of 3,600 soldiers from the 25th Infantry Division to *Operation Uphold Democracy* in Haiti. The card accounted for personnel readiness by updating and processing key information to the MARC during the preparation for overseas movement (POM). Based on 25th Infantry Division requirements, the MARC program produced two spin-off cards for issuing in Haiti. The first was an access control card for local national employees and the second an access control card for secure areas. After the success of the MARC during *Operation Uphold Democracy*, Marine Forces-Pacific requested inclusion in the MARC test bed. The card was issued to all Marines in Hawaii in September 1995. The US Marine Corps modified the MARC to serve as a field training record and shipboard accountability card, in addition to the card's basic design.

The DOD funding for the two-year Hawaii MARC card test ended in October 1996. After the success of the MARC, the commander of the 25th Infantry Division and USARHAW decided to continue the program throughout FY97 for division and USARHAW units. The 25th Infantry Division and USARHAW food service chief said the MARC in the dining facility was a success and the Army needed to keep the card. The MARC ends all paperwork associated with the meal cards. Also, the card is needed for deployments to update soldier information during predeployment POM. The only consequence to units that decide to use the MARCs is funding. The cards are funded internally.

The 25th Infantry Division and USARHAW soldiers will be the only ones to receive the cards upon inprocessing because of the expense of purchasing the blank MARC cards: $6.00 each. All commands outside the 25th Infantry Division and USARHAW that want to continue using the card must figure out a way to reimburse the 25th Infantry Division for the cost of the card and additional costs. The future of the MARC program within the 25th Infantry Division and USARHAW beyond FY97 is uncertain. Efforts continue to secure funding to expand the MARC program Armywide in FY98.

Experimentation and modification of current capabilities also continues. The 25th Infantry Division has replaced the Schofield Barracks, HI, library card with the MARC card, for example. The US Navy is currently testing use of the card as the following:

- Training record
- Security badge/access control
- Installation processing
- Travel support (orders and advance pay)
- Morale, welfare and recreation support
- Recruit processing
- Recruit dental processing
- Reserve mobilization
- Insertion on the Navy Smart Ship (*USS Yorktown*)

The United States Military Academies are developing a cadet smart card. The United States Military Academy at West Point, NY, is interested in adding MARC requirements to support academics. The developers of the MARC are working with the Military Police and Military Intelligence schools to develop a card to integrate into the Prisoner of War Information System (PWIS). A prototype has been developed. If successful, it will be integrated into the MARC system.

Overall, the MARC has proven a success. MARC technology is the wave of future for the military. Daily operations will be easier with the card. With the simple swipe of a card, the MARC will cut back on hours of manually processing routine information.

The task now is to incorporate MARC technology throughout the armed forces.

Another use for smart card technology is tracking and processing supplies from the factory to the foxhole, through the use of the optical memory card contained in the Automated Manifest System (AMS).

Automated Manifest System And the Optical Memory Card

The AMS is a user-friendly software package designed to operate at different supply points: the depot, central receiving/shipping points (CRSPs), and supply support activities (SSAs). Each of these operations has similar equipment and software packages that complement the other, making them compatible. The AMS hardware consists of an IBM-compatible personal computer, optical memory card reader/writer, bar code reader (BCR), radio frequency tag, tag docking station, and printer. The AMS system outputs several different products such as scannable bar code labels, radio frequency tags, and optical memory cards. The AMS is currently a standalone system that is being incorporated into the Standard Army Retail Supply System-Objective (SARSS-O) used at the direct support unit. The AMS is an efficient, cost-effective and compact shipping manifest and database management system that will expedite receipt processing when used properly.

The need for AMS arose during evaluations of the logistical problems during *Operation Desert Shield / Storm* in the early 1990s. Supplies were inadequately manifested. Storage sites had no access or visibility. No inventory control procedures existed. All these logistical problems led to major accountability problems. The General Accounting Office (GAO) cited these accountability problems as the main reason for poor supply distribution and excessive costs. The Defense Logistics Agency (DLA) then began research that developed the AMS.

The AMS's key component for reducing receipt processing is the Optical Memory Card. The size of a typical credit card, the Optical Memory Card provides detailed information on the contents of each multipack or containerized shipment. Each card accompanies its multipack or container to its final destination.

The Optical Memory Card accesses and updates the SARSS database, which results in the immediate search and retrieval of high-priority items. The AMS, and specifically the Optical Memory Card, are designed to interface with all the military services' retail supply systems. This interface enables asset visibility, expedites receipt confirmation, automates the reconciliation process, gives automated reports of discrepancy, and creates issue and packing lists for supported customers.

The laser Optical Memory Card has many advantages. The Optical Memory Card can store 2.5 million bytes of information (approximately 1,200 pages of hard copy). It costs only $4.00 per card. Very resilient, the Optical Memory Card can withstand temperatures from –40 to +212 degrees Fahrenheit. In addition, it is not affected by severe weather, water or shock damage. The Optical Memory Card also has a protective coating that shields it from magnetic fields, electrostatic, and radio frequency interference.

The laser Optical Memory Card has and will continue to increase inventory accuracy along with asset visibility. The Optical Memory Card allows a database to prioritize offloading and issue, which gets high-priority supplies to the unit quicker. This system will eliminate the backlog of processing shipments. Before the AMS, 40 personnel worked three shifts to receive and process receipts from a standard shipment. With the introduction of AMS, four soldiers can complete the same tasks in a single shift.

Optical Memory Card in the Field (Bosnia)

The following three examples illustrate how advances in card technology have proven their value to the Army's materiel managers. In April 1996, the 77th Maintenance Company's Class IX (repair parts) SSA, operating out of Camp Tampa, Bosnia, was fielded the AMS. The AMS can read the credit card-sized three-megabyte (3MB) optical manifest cards attached to the outside of every shipment from the wholesale system. Before AMS, processing parts through the receiving section using the Standard Army Retail Supply System (SARSS-1) was a time-consuming ordeal. The soldier had to take the paper work from each part: two copies stayed with the item and one copy went to the workstation for processing into the SARSS-1 system using Logistics Application of Automated Marking and Reading Symbols (LOGMARS). Dedicated customer parts were marked with the customer's Department of Defense Activity Address Code (DODAAC) and placed in the customer bin, while authorized stockage list (ASL) replenishment parts that arrived with a SSA document number would be set aside. Once processed into the SARSS-1, the system would either produce a materiel release order (MRO) or a location bin ticket for storage.

The AMS's ability to use the optical manifest card to *batch process incoming shipments from the depot cut the time that parts spent in the receiving*

section of the warehouse in half, saving about 80 manhours of work per week. Given the substantial daily force protection requirements, the optical manifest card's savings of manhours was an important factor in the success of the 77th's Class IX mission.

Another Management Tool

A second important management tool that the optical manifest card gives the materiel manager is the *ability to promptly identify any discrepancies in shipments from the wholesale level before these documents are pseudo-receipted into SARSS*. The process begins when the manager sets the SARSS parameters so that incoming shipments are not batch-processed, and each receipt must be scanned by the soldiers in the receiving section. Once the optical manifest card is read by the AMS, the AMS creates a file containing the document numbers of all items in the shipment. As the soldiers process the individual parts into the system, the document numbers are automatically removed from this file. Any documents left in the file after the shipment is completely processed are discrepancies. The materiel manager then uses this information to prepare a report of discrepancy, which is sent to the responsible Inventory Control Point/National Inventory Control Point (ICP/NICP).

In addition to helping the SARSS manager identify problems with support from the wholesale system, the report of discrepancy greatly reduces the work associated with pseudo-receipts (transportation follow-ups). SARSS pseudo-receipts any D6Ss (document identifier codes for materiel receipt acknowledgement cards from the wholesale level) that have not yet been processed into the system after 45 days from the time wholesale sends its first ship status to the SSA.

Working from pseudo-receipts is a very time-consuming process for the Army's materiel managers. Not only does every pseudo-receipt over $50 result in an inventory adjustment report, but also every pseudo-receipt over $500 must be researched. In addition, SARSS freezes the line associated with the pseudo-receipted document, requiring a physical inventory of the line. Using the report of discrepancy generated by the process of receipting all D6Ss with the optical manifest card, the research time is reduced because the manager does not need to request a document history from the supporting SARSS-2B.

In addition to batch-processing and identifying reports of discrepancy in a shipment from the wholesale level, the SARSS will automatically send a transaction to the Logistics Support Agency (LOGSA) (coded TK_) after reading the optical manifest card. This action starts the SSA's receipt processing time on the Individual Direct Support System Activity Performance Report (IDAPR). In the past, the central receiving point sent the TK_ to LOGSA, and this was fine if the shipment got to the SSA immediately. However, as was the case often in Bosnia, shipments awaited transport from the central receiving point to the SSA for days or even weeks, resulting in the IDAPR not accurately reflecting the true time it took the SSA to process the D6Ss upon receipt. Using the AMS and optical manifest card, the SARSS automatically sends a TK_ for every receipt on the card. The SSA's TK_ takes precedence over the TK_ from the central receiving point so the IDAPR will accurately reflect the true picture of receipt processing at the SSA.

The use of AMS and the optical memory card in the logistics operations of US forces in Bosnia has been vital to the reduction of supply processing time. The optical memory card is a vital tool in moving supplies from the factory to the foxhole.

Positive Impact

The introduction of card technology into the Army logistics system is having a significant, positive impact on both the consolidation and storage of personnel information and the reduction of order to ship time for supplies. The MARC reduces excess paper work and increases unit readiness, while the Optical Memory Card helps the customer unit receive the correct shipments faster and more efficiently. Smart cards such as the MARC and the laser Optical Memory Card, using integrated circuit chip and laser optical technology, have made great strides in allowing timely and accurate information flow – imperative as Velocity Management moves the force into the 21st Century.

The authors are Quartermaster graduates of the Combined Logistics Officer Advanced Course 97-5/6 at Fort Lee, Virginia.

Hooking Up With the Sling Load Inspection Record

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It was the strangest sight – repair parts rained like manna from heaven. The metal box full of Class IX (repair parts) within the A22 cargo bag had no top, so the straps of the A22 had nothing to bind to its upper flaps. In the rotor wash of an UH-60L Blackhawk helicopter, the result was loose supplies falling to earth into the trees. Who had rigged this load? Better yet, who had inspected the load and approved it for sling load? The new Sling Load Inspection Record seeks to answer these questions.

Sling loading four collapsible JP8 fuel tanks at Fort Campbell, Kentucky

The New Army Standard

The Sling Load Inspection Record (DA Form 7382-R), became the US Army standard 1 Oct 97. The inspection record "pins the rose of responsibility" on equipment and supplies readied to sling load, much like a Parachute Record Logbook serves as a list of checks and balances for parachute riggers. All Army loads sling loaded under a helicopter require the form before being picked up.

The checklist is a record of both the load rigger's checks and the load inspector's checks. To qualify as a load inspector, a soldier must have the rank of E-4 or above and be a graduate of either the Pathfinder School, Air Assault School or the Sling Load Inspector Certification Course. FM 10-450-3 (Multiservice Helicopter Sling Load: Basic Operations and Equipment) covers the Army's new standard in more detail in Appendix I.

Interim Change to the Published Form

As the proponent, The US Army Quartermaster Center and School has identified a change to the Sling Load Inspection Record: shading section F in the "load rigged by" column. This change will ensure that the soldiers rigging the load use the proper link counts because the inspector will count the links before the links are secured. Only the inspector will be required to initial this section if the proper link counts were used. After the inspector establishes the correct link count, he can direct the rigging crew to secure the loose ends of the chains. Additional information that should be listed is identified on the sample form with this article.

Transporting a HMMWV by helicopter at Camp Humphreys, Korea

Not As Radical As It First Seems

The first thought on many leaders' minds when they saw the message establishing the Sling Load

Inspection Record as the standard was something like this: "You mean I've got to set down a Chinook helicopter, which operates at approximately $4,000 an hour, and rush inspection sheets to the pilot while he and the other three aircraft in his stick wait?" This is a common misconception about the Sling Load Inspection Record. Although the first copy of the three-sheet form does go to the pilot of the aircraft, the first copy can be FAXed or go into message distribution. This first copy should be discussed during coordination with the supporting aviation unit. The aviation unit will make the final determination on the form's distribution. In all cases, the form should be available to the aviation unit before the actual operation.

The 'Rose of Responsibility'

Using the Sling Load Inspection Record is a very sound safety practice. First, the form forces quality control on the personnel rigging the load. Annotations of shortcomings on the form serve as either a record of a soldier's training deficiencies or his lack of attention to detail. The form provides the rigger with a step-by-step diagnostic list of items that he should consider while rigging the load. In this aspect, the checklist is used much as an Army manual for preventive maintenance checks and services on a piece of equipment.

Quality Control

The Sling Load Inspection Record forces supervisors to perform quality control checks on proposed loads and forces units to use trained personnel. The Army's new standard also gives the servicing aviation unit the peace of mind of knowing that the load has been properly rigged and inspected. Days after the form was made the Army's standard, an aircraft had to "cut sling load" (release a load in flight) on an artillery piece that had been improperly rigged. When the accident investigators came to determine the cause of the incident, they wanted to see the copy of the load's DA Form 7382-R that went to the aircraft's unit, not the customer's or unit's copy.

OPTEMPO Check

The record acts as a buffer between high operating tempo and accidents. Near Fort Polk, LA, at the Joint Readiness Training Center's (JRTC's) intermediate staging base on England Air Park, a multiple load of JP8 in collapsible fuel tanks was reconfigured just before pickup by a CH-47D Chinook helicopter. The final changes to the load occurred under the rotor wash of the waiting Chinook. During the hasty rerigging, the three, one-fourth-inch cotton breakaway ties (required to hold the sling legs together) slipped up the legs and toward the load's apex. In the rush to hook the load to the hovering aircraft, the hook-up crew did not notice that one of the sling leg's chains had slipped under a nozzle of a fabric fuel tank. The hook-up crew unknowingly dissipated the static, placed the apex on the cargo hook, and rushed back to their watch position.

The signaler then motioned for the aircraft to lift the load. After the load was about 20 feet off the ground, the tension on the sling leg's chain sheared the nozzle off the fuel tank. In the resulting mushroom cloud of fuel formed by the rotors' belabored wash, jet fuel doused the sling load hook-up crew and the Chinook's flight engineer.

The saving grace was the accident's occurrence a year after the Army changed its fuel standard from JP4 to JP8. If the fuel had been the more volatile JP4 and had reached the engine's intakes, the result might have proven more disastrous. However, the soldiers escaped with minor injuries. The new Sling Load Inspection Record can prevent such an accident by its required, paper-annotated checks that negate the possibility of a crew hooking up an uninspected load.

Training Evaluation

The inspection form also serves as a record of training deficiencies. If certain pieces of equipment are constantly being rigged incorrectly or certain steps are consistently missed on similar loads, a commander may determine that the unit, certain crews or individual soldiers require reinforcement or refresher training.

The form may also be used to train. Soldiers learning how to rig supplies and equipment for sling load can take the form and go down the list, step by step, and ensure that they prepared the load properly.

Historical Record

The form also can be used as a historical record. Inspection sheets can become an accurate demand history during a Combat Training Center rotation for a support unit that supplies a maneuver brigade using both air lines of communication and a logistics helipad. For example, if a support unit has inspection records from sling loading 10 collapsible water tanks to a task force brigade at JRTC for a 30-day period in a temperate environment, chances are a similar brigade will use the same amount in a similar season.

Reading Between the Lines

The Sling Load Inspection Record also has other applicable, but less obvious uses. One of these uses is for asset tracking. Looking at a particular check-

SLING LOAD INSPECTION RECORD

For use of this form, see FM 10-450-3; the proponent agency is TRADOC

1. SUPPORTED UNIT	2. ITEM DESCRIPTION AND SERIAL/BUMPER NO.		3. WEIGHT
801st MSB	M998	H6	7700 Lbs.

4. SUPPORTING AVIATION UNIT	5. TYPE AIRCRAFT	6. RIGGED IAW FM NO
7/101 AVN	CH47D	10-450-5

INITIAL ONLY ITEMS APPLICABLE TO YOUR SPECIFIC LOAD	LOAD RIGGED BY	LOAD INSPECTED BY
7. VEHICLE OR LOAD		
A. CORRECTLY POSITIONED	CAC	RDH
B. EMERGENCY BRAKE SERVICEABLE AND SET	CAC	RDH
C. FUEL LEVEL NOT TO EXCEED 3/4 TAN	CAC	RDH
D. PREPARED AND PADDED IAW THE AP	CAC	RDH
8. SLING SET		
A. CORRECT NUMBER AND SIZE (10K OR 25K) *10K*		RDH
B. INSPECTED FOR SERVICEABILITY IAW FM 10-450-3		
C. SLING LEGS PROPERLY ROUTED AND ATTACHED TO LIFT PO		RDH
D. CORRECT LINK COUNT FRONT AND REAR *F 80 R 45*	CAC	RDH
E. CHAIN SECURED IN GRAB LINK	CAC	RDH
F. EXCESS CHAIN TIED OR TAPED (10 LINKS OR MORE)		RDH
G. BREAKAWAY TIES INSTALLED	CAC	
H. APEX ATTACHED *2*	CAC	
I. APEX SPACER INSTALLED IF REQUIRED		
J. REACH PENDANT INSTALLED IF REQUIRED		
9. A-22 CARGO BAG		
A. INSPECTED FOR SERVICEABILITY IAW FM 10-450-3		
B. RIGGED IAW FM 10-450-3		
C. SUSPENSION WEBS ATTACHED TO CONTAINER AND TAPED		
D. CLEVIS BOLT THROUGH SUSPENSION WEB D-RINGS (4 EACH)		
E. CORRECT SLING LEG ATTACHED		
F. APEX ATTACHED (CORRECT TYPE)		
G. APEX SPACER INSTALLED IF REQUIRED		
10. CARGO NETS		
A. CORRECT SIZE (5K OR 10K)		
B. INSPECTED FOR SERVICEABILITY IAW FM 10-450-3		
C. LOAD CORRECTLY POSITIONED		
D. LIFTING LEGS PROPERLY CONNECTED TO APEX FITTING		
E. HOOKS TAPED		
F. LIFTING LEGS TAPED OR TIED (BREAKAWAY)		
G. CORRECT NUMBER AND SIZE SLING LEGS		

List size of set used

List link counts front and rear

List how many apexes and pendant reaches

Rigger does not initial

REMARKS

Load rigged and inspected IAW FM 10-450-5.
No deficiencies identified

11. LOAD RIGGED BY:			
UNIT (PRINT)	NAME (PRINT)	INITIALS	RANK
801st MSB	Carlos A. Correia	CAC	1LT
SIGNATURE		DATE	
Carlos A. Correia		21 October 1997	

12. LOAD INSPECTED BY:			
UNIT (PRINT)	NAME (PRINT)	INITIALS	RANK
801st MSB	Ray D. Henry	RDH	CPT
SIGNATURE		DATE	
Ray D. Henry		21 October 1997	

DA FORM 7382-R, MAR 97 USAPPC V1.00

list and annotated load, a leader can imply that certain assets are standard for that load. For example, a soldier reads on the form that the load was four, 500-gallon fabric fuel tanks. The reader knows that such fuel tanks require a full 25,000-pound sling set for lifting the tanks. Also annotated on the form are how many apexes were used and whether the load was rigged on one apex to go on the center hook or two apexes to go one each on the forward and aft cargo hooks. Thus, without any other record of what air assets have gone forward, a soldier can resort to reviewing the Sling Load Inspection Records for such critical information.

In many cases where a sling load operation resupplies customer units in training during peacetime, air assets are misplaced and reports of survey are initiated. A report of survey is useless to recover air assets if the servicing unit does not have accurate records of what assets were sent forward. The Sling Load Inspection Record serves as an excellent supporting document for recovering air assets.

Not Nearly As Painful As It Seems

The Sling Load Inspection Record is nothing more than an official, hard-copy product of what good units already had in place. The distribution of the document – one copy to the aviation unit (before or after the operation), one copy attached to the load, and one filed by the supporting unit – is not as radical as first impressions might seem. The form proves an excellent way to keep track of accountability, demand history, and air assets. Its use will set a new standard in sling load safety and should aid logisticians in regaining the confidence of aviation units that previously lost sling loads after improper rigging.

The authors are Quartermaster graduates of the Combined Logistics Officer Advanced Course 97-13/14 at Fort Lee, Virginia.

Army's First Digitized Division

The Army's Experimental Division will become the first digitized division by 2000. The 4th Infantry Division (ID) at Fort Hood, TX, is one of three divisions and a corps slated to be digitized. The first digitized corps will be III Corps. In 2003, the 1st Cavalry Division, also at Fort Hood, will become the second digitized division.

By 2004, III Corps, parent command for the 4th ID and 1st Cavalry, will be digitized. That includes the corps support command and other "corps slices." The 3d Infantry Division, Fort Stewart, GA, will be digitized as resources become available.

Warfighting Responsibilities Remain

Fiscal constraints will permit only the cavalry squadron and one brigade in each division to be outfitted with embedded digitized ground maneuver systems (M1A2 Abrams tanks, Bradley Fighting Vehicles and selected enhancement programs). The other brigades' equipment will have applique digitized systems. As the divisions are being digitized, they will retain their warfighting responsibilities. The 4th ID became the Army's Experimental Force in 1995. Its 1st Brigade became Task Force XXI and was outfitted with digital communications systems, new equipment and new weapons systems.

In March 1997, after training on the new equipment and new tactics, techniques and procedures, the 1st Brigade was tested in an advanced warfighting experiment at the National Training Center (NTC), Fort Irwin, CA. Its success against NTC's world-class Opposing Force was largely attributed to increased situational awareness made possible by digital communications.

The 4th will continue to be the developmental organization for the Army to test new concepts and technologies. The division will take advantage of the infrastructure in existence at Fort Hood.

The new divisions will also be reorganized similar to the "interim division design." General William W. Hartzog, who is tasked with overseeing the creation of Army XXI, said he thinks the Army will end up with a design that's a little smaller, somewhere in the neighborhood of 15,000 soldiers. The commander of the US Army Training and Doctrine Command also said Army leadership feels the division will continue to be the primary warfighting organization. In the upper end of the spectrum of conflict, in fights such as *Operation Desert Storm*, a division headquarters is very important.

Container Delivery System: Past, Present and Future

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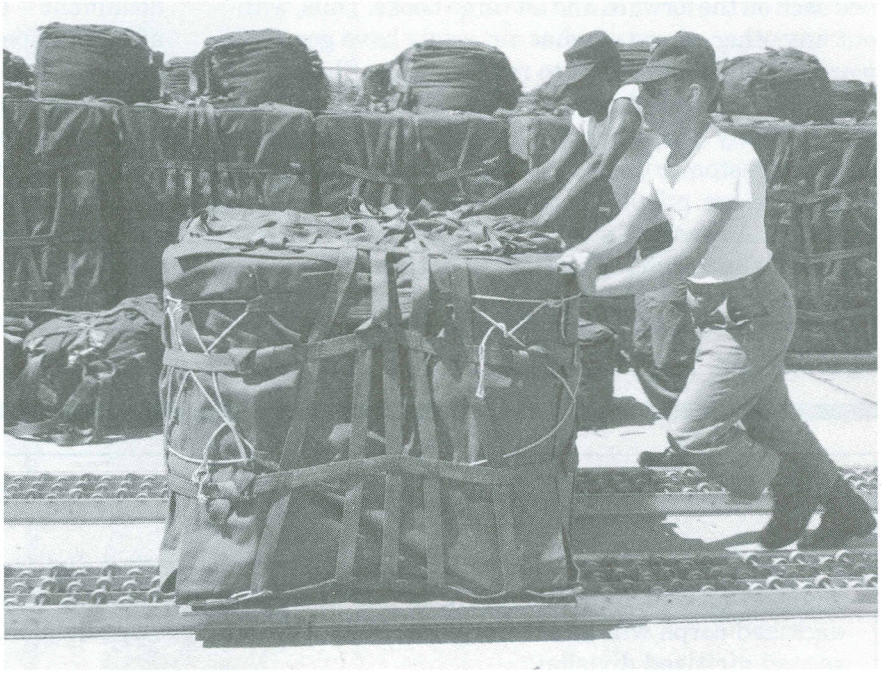
Logisticians must consider all means available to deliver supplies and equipment into remote areas. Aerial delivery operations simplify the difficult task of delivering supplies. The container delivery system (CDS) is the most commonly used method for the aerial insertion of supplies quickly for military and contingency operations, field training exercises and at training centers such as the Joint Readiness Training Center (JRTC), Fort Polk, LA. Today's airborne soldiers jump into and secure an area of operations with minimal supplies and equipment. They take what they can carry and receive most supplies by airdrop.

During World War II, aerial resupply evolved. Throughout each successive military action since World War II, the methods of delivering supplies by air developed into the current CDS.



In 1954 at Fort Bragg, North Carolina, soldiers packed and pushed A22 containers that still have not changed much since design during the Korean conflict.

Leonardo da Vinci Tested Plans

Although Leonardo da Vinci developed and tested plans for parachutes in the 1500s, the first *workable* air drop operation occurred in 1783 when an individual jumper leaped from a building. Even though this first jump did not involve a person parachuting with equipment, it launched the concept of resupply by air and showed the ability to get supplies and equipment into an area quickly.

During the 1920s and 1930s, aircraft and balloons delivered both personnel and supplies by parachute to disaster sites in the US. Other countries such as Russia, Germany and Italy developed operational concepts for use during wartime operations. The US Army did not implement airborne and airdrop training until the late 1930s when Germany displayed its uses in actual assaults in Poland. However, not until World War II did the US Army use parachutes for resupply on a large scale for military purposes. The need for resupply of weapons and equipment to troops was paramount during several key instances in World War II.

The Quartermaster Branch did not pick up the aerial resupply and rigger missions until 1950. Before that, Infantry was the proponent branch. The initial aerial resupply systems were made from horsehair and canvas. The rigging personnel wrapped and secured supplies with horsehair. They used canvas for padding and protection before the bundles were pushed out the door to the awaiting personnel. The Army still uses canvas today. The A22 container that holds the load together is made of canvas or nylon. The A22 is designed as it was after the Korean conflict, with minimal changes.

In World War II, the US Army first used airdrop methods to resupply remote or encircled forces, as well as resupply indigenous forces to fight the enemy. Military leaders realized that if personnel could arrive by parachute, so could much-needed supplies.

The most significant airdrop operation occurred in Bastogne, Belgium, in December 1944 when the 101st Airborne Division was encircled by German forces. Raids by Germans had decreased the division's supplies to a minimum. Therefore, resupply by air was the logical method. Although aircraft losses and casualties resulted, both soldiers and civilians were surprised at the success of the operation and the ability of the unit to maintain its foothold until reinforcements arrived.

Today's Systems Developed

During the Korean conflict, whole divisions were more likely to be resupplied by airdrop than not. Many of the airdrop systems in use today were developed during the Korean war. For example, logisticians developed a system that consisted of placing supplies on a 4 x 4 foot square sheet of plywood and securing the load with canvas. This system could drop up to 500 pounds of equipment.

Also, riggers developed the concept of using extraction parachutes to pull the loads out of the aircraft rather than relying solely on the gravity method. Instead of soldiers inside the aircraft kicking or pushing the equipment out, the pilot raises the nose of the aircraft from 2 percent to 5 percent so that the containers slide out of the aircraft with the assistance of floor-mounted roller conveyors. Pilot parachutes then deploy the recovery parachutes.

Riggers also developed identification methods for particular types of equipment: red parachutes for ammunition, green for medical supplies, and white for food and water. At this time, the US Air Force established the 800-foot above ground level (AGL) drop altitude for the CDS. Currently, the drop altitude for CDS is 400 feet AGL. Nonbreakable supplies were dropped from 100 to 200 feet without parachutes (free drop). From September 1950 until September 1951, the Air Force dropped more than 13,000 tons of aerial resupply with minimal loss.

In Vietnam at Khe Sanh, US troops received supplies by airdrop in the 1960s. A lieutenant from the 109th Quartermaster Supply Company parachuted into Khe Sanh to assist in the aerial resupply mission. For days, he lived side by side with the besieged Marines and coordinated for airdrop missions supporting the encircled US forces. More than 8,000 tons of critical supplies were airdropped during a 78-day period in 1967. Even a case of eggs survived airdrop undamaged. During Khe Sanh, the most prevalent drop altitude was about 10,000 feet AGL, using A22 containers with 26-foot high-velocity parachutes. This improved accuracy and provided aircraft security from small arms fire.

During the Vietnam war, riggers improved upon the innovations developed during the Korean conflict. Developments included the delayed opening of parachutes and the Adverse Weather Aerial Delivery System. This system greatly improved the C-130 aircraft's airdrop capabilities and accuracy in darkness or bad weather. Today, aircrews view poor weather and visibility as aids because poor conditions no longer severely affect accurate delivery of supplies, but provide concealment from small arms fire.

After finalizing the developments introduced during the Korean and the Vietnam wars, airdrop technicians left the CDS basically the same throughout *Operation Urgent Fury* (Grenada, 1982) and *Operation Just Cause* (Panama, 1989) except for minor modifications to the system. For example, between 1988 and 1989, the skid board dimensions changed to 48 inches by 48 inches in dimension from 53 1/2 inches by 48 inches.

Commanders did not capitalize on the potential successes of the CDS during *Operation Desert Shield/Storm* in Southwest Asia in the early 1990s. Most did not know how to use CDS. As a consequence, commanders did not maximize combat effectiveness and time available, thus risking the safety of the ground forces. This situation is especially tragic because CDS can greatly aid ground forces in feeding, equipping and sustaining themselves.

CDS Configuration Standardized

From the Vietnam war to current operations, personnel have configured CDS in the following way: a skid board constructed of 3/4-inch plywood and energy-dissipating material (cardboard "honeycomb"), an A22 container to rig equipment no taller than 83 inches, one cargo parachute, one pilot parachute, and various expendable supplies. (Consult FM 10-500-3 (Airdrop of Supplies and Equipment Rigging Containers) for additional configurations of CDS.)

The CDS has served the military well in training and military missions in which the primary supplies are Class I (rations), III (petroleum, oils and lubricants), and V (ammunition). It works well because the receiving units can retrograde the airdrop equipment back to the unit holding the hand receipt without loss of the items. Air items are extremely expensive. One CDS bundle costs about $3,000 in expendable and nonexpendable items.

With today's focus shifting from military operations to humanitarian efforts and operations other than war (OOTW), Congress has greatly reduced the military's budget. Therefore, the Army must consider

the total cost of airdrop missions for OOTW. With humanitarian aid missions or OOTW, recovery of aerial delivery equipment cannot be expected. After *Operation Just Cause* in Panama, for example, the 82d Airborne Division lost thousands of dollars in airdrop equipment to the economically depressed civilian population. Panamanian citizens made parachutes into clothing and building protection. Heavy drop platforms became excellent roofs and structural siding for homes. The US military cannot allow this situation to happen again.

Current CDS Container Drops Costly

Currently, the military has dropped more than 90,000 CDS containers in the last 1 1/2 years, totaling over $270 million in air item losses alone. The US Air Force dropped recent relief loads in Bosnia from more than 10,000 feet to keep out of range of anti-aircraft weapons and surface-to-air-missiles.

Although the US State Department reimburses portions of the cost, the US military cannot sustain the finances for these operations because of the drawdown of forces and the budget reductions. Therefore, the US Army Natick Research, Development and Engineering Center at Natick, MA, and the Air Force have developed a one-time-use CDS. This container, known as the TRIAD, consists of a heavy-duty cardboard container similar to a CONEX insert, type-8 nylon, a static line and no parachute. Meals, Ready to Eat (MREs) are typically sent in this container for resupply.

TRIAD Benefits

The applications of TRIAD are revolutionary. A TRIAD can be dropped from more than 10,000 feet with excellent accuracy. More importantly, civilians will not be injured, maimed or killed by large CDS bundles, as occurred in recent memory with the Kurdish refugees.

The TRIAD's gravity method allows the container to roll out of the aircraft. The static line temporarily constricts and jerks the load, causing the system to burst. The bundle turns upside down and empties the supplies onto the drop zone. In short, the system acts like a giant piñata.

Natick is also developing a lower-cost, one-time-use parachute for humanitarian purposes only. This can be described as a throwaway parachute. This system consists of a parachute and container which cost about $500 with a 2,200-pound capability in a high-velocity mode.

Other systems being fielded include a radar system that allows CDS drops in periods of low visibility and adverse weather conditions. This radar shows obstacles in the path of the aircraft, pinpoints drop zones, and identifies friendly and enemy aircraft. The radar can multiply the airdrop capability of the C-130 aircraft by allowing the planes to deliver supplies at night, at high altitudes, and in all weather conditions. Another system is the Guided Parafoil Air Delivery System (GPADS). The GPADS is a deployable wing that literally guides the supplies to the drop zone. The systems come in three types of weight allowances: light, medium and heavy. However, this equipment is more appropriate for use within US military strategic operations. The GPADS is not economically feasible for humanitarian aid or OOTW.

Logisticians must react quickly and remain flexible in the delivery of supplies to either military or civilian personnel. In OOTW soldiers are more likely to be involved in peace keeping, humanitarian assistance, disaster relief, nation building, or noncombatant evacuation operations.

Unique Rigging

For humanitarian missions or OOTW, the rigging of equipment is unique. Generally, airdrop technicians rig supplies as a one-time drop for which no rigging standards have been published. Each one-time drop has its own specifications and requirements. For military operations, the rigging is repetitive. For example, an MRE CDS bundle always has 42 cases secured in an A22 container. By contrast, for OOTW, riggers could be preparing baby food, diapers, powdered milk, and frozen pigs for which there are no rigging standards.

Soldiers must be able to use aerial resupply in the Force XXI era of the emerging US Army. The Army of the 21st Century will have fewer soldiers for missions. Therefore, the Army must rely on aerial resupply as a combat multiplier for efficiency and economy of operations. Aerial resupply reduces the need for excessive handling by getting supplies from factory to foxhole quickly. The leader's ability to adapt to changing aerial resupply systems will bridge the gap between today's Army and the Army of the future.

The authors are Quartermaster graduates of the Combined Logistics Officer Advanced Course 96-11/12 at Fort Lee, Virginia.

Field Services in Exercise Cobra Gold '97

LT MaryEllen M. Stephens

Editor's Note: The 540th Quartermaster Company (Field Services) deployed a slice element of laundry and bath specialists to Phitsanoluk, Thailand, 22 Apr 97, as a part of the 524th Logistical Task Force (LTF) in support of Exercise Cobra Gold '97. Cobra Gold is an annual US Commander in Chief, Pacific Command-sponsored Combined/Joint Air, Land, Maritime, Amphibious and Special Forces exercise conducted with the Royal Thai Army. For this exercise, assets of the 45th Support Group (Forward) were assembled under the 524th LTF. The LTF's mission was providing area combat service support to all US forces throughout Thailand. The 540th Quartermaster Company's mission was to provide laundry services for more than 1,600 soldiers and showers for the 800 soldiers who were conducting training in the maneuver box. From this platoon leader's standpoint, the 540th was successful in all facets of its mission. At the end of the exercise, the field services company had processed 3,539 bundles of laundry and given 2,392 showers.

Several planning issues for this deployment included the number and location of personnel being supported, site selection for both laundry and shower operations, type of laundry tracking system to use, and amount of water support needed. The 540th deployed with 30 soldiers, 3 laundry machines, and 2 shower points (consisting of 18 shower heads).

The number and location of soldiers being supported is the primary consideration when planning any combat service support mission. In the case of laundry, the schedule for laundry turn-in and pickup was based on this information. During Cobra Gold '97, the 540th provided 48-hour turnaround service to all soldiers participating in the exercise.

Turnaround Service

This task was easy for the soldiers at Camp Akathosarod, one of two US Army installations in the bustling city of Phitsanolak. In their case, their individual supply representatives would drop off and pick up laundry from the laundry site at a designated time. About 12 days into laundry operations, 800 of the supported soldiers moved out to the training area, near a town called Tak about three hours by convoy from the laundry site. This made achieving the 48-hour turnaround time more difficult. In addition to washing the clothing, the 540th took on the responsibility of driving laundry to and from the brigade support area (BSA). The 540th joined the logistics packages (LOGPACs) organized by the 524th LTF. Every other day, a LOGPAC would convoy to the BSA where the 225th Forward Support Battalion (FSB) set up a laundry turn-in and drop-off point. The individual units came to this point to sign for clean laundry and turn in dirty laundry to the 540th representatives. Because of time lost transporting laundry, the 540th conducted 24-hour operations on several occasions in order to have the laundry ready for the next push to the BSA. The system proved very effective for the customers.

The 540th was also responsible for establishing and operating a shower point at the BSA. The shower point was staffed at all times by four soldiers who lived at the BSA. This operation proved an incredible morale booster for the soldiers who were operating in the field.

Obstacles Overcome

During the set up and the initial phase of the operation, the shower team overcame several obstacles. The first obstacle was the site selection. There was really no suitable site in or around the BSA. Once the site was selected, the Engineers were called upon to build a sump for the water runoff.

The next challenge was transporting water from the Reverse Osmosis Water Purification Unit (ROWPU) site to the shower site. Without a semi-trailer-mounted fabric tank (SMFT), the 250-meter distance might as well have been a mile. The 540th managed to transport a minimal amount of water by using its own assets for the first four days of operation. On the fifth day, the 524th LTF sent out one of the 40th Supply and Service Company's SMFTs for the sole purpose of transporting water to the shower point. With the SMFT on site, the water problem was solved just in time for the first large wave of soldiers who needed showers.

In addition to issues resolved during the course of the mission, a couple of issues had to be resolved before deploying to Thailand. One such issue hinged around the tracking method for the laundry. The 540th usually uses a pinning system to keep track of

each soldier's clothing. At the time of equipment deployment, the 540th did not have enough pin sets to run the mission. The pin sets were on order but did not arrive in time for deployment. The possibility of using mesh bags was discussed. In the end, the 540th was able to purchase pin sets locally.

The 540th Quartermaster Company ran a smooth operation strongly focusing on the individual customer's needs. With the presence of the laundry and shower services, the morale of the soldiers remained high – despite the tropical weather conditions in Thailand during Cobra Gold '97 when personal hygiene was particularly important.

LT MaryEllen M. Stephens is a Platoon Leader in the 540th Quartermaster Company (Field Services), 17th Corps Support Battalion, Schofield Barracks, Hawaii. She is a graduate of Gonzaga University, Spokane, Washington, and the Quartermaster Officer Basic Course.

Making It Happen at Cobra Gold '97: A Liquid Logistics Adventure

LT Sean L. Kaul

Editor's Note: This platoon leader focuses on the accomplishments of a petroleum, oils and lubricants (POL) platoon and a water treatment platoon from 40th Supply and Service Company, 524th Combat Support Battalion, 45th Corps Support Group (Forward), that deployed to Thailand for Exercise Cobra Gold '97. Cobra Gold is a combined joint exercise designed to deploy forces to Thailand as a part of the US Joint Task Force (JTF) to conduct a multinational combat training exercise (CTX), field training exercise (FTX) and combined arms live fire exercise (CALFEX), while concentrating on deployment and sustainment operations.

Cobra Gold is an annual, six-week exercise during April and May, the hottest time of the year in Thailand where daytime temperatures linger between 103 and 107 degrees Fahrenheit. Most units from the 25th Infantry Division (ID) and I Corps set up operations in Phitsanoluk, with units spread out between two US Army installations, Camp Akathosarod and Camp Narasuan. The two camps are about 10 miles apart in the city, with bumper-to-bumper traffic and enough mopeds to make you think of biker week at Daytona Beach. City road conditions limited bulk fuel and water pushes to the evening hours when the traffic died down. As the FTX began, units from the 25th ID moved to the maneuver "box" located north of Tak, about a three-hour drive west of Phitsanoluk.

The POL platoon arrived in mid-April with the advanced echelon (ADVON) party to set up operations. The platoon's mission was to conduct wholesale and retail distribution of JP8, diesel, and motor gasoline (MOGAS) to the JTF. Diesel fuel was for civilian-contracted equipment. The JP8 requirements called for the ability not only to issue bulk fuel, but also to provide a hot refuel point for aircraft and a retail point for individual vehicles. To accomplish this, the POL platoon set up a fuel system supply point (FSSP), using three 10,000-gallon collapsible fuel tanks, branching off two hot refueling points and a bulk issue point. The retail point consisted of a heavy expanded mobility tactical tanker (HEMTT) and tank and pump unit (TPU) for JP8, with the MOGAS and diesel hand-pumped from 55-gallon drums. Contractors had already prepared the site, and the berms were in place awaiting the liners and collapsible fuel tanks. However, partial completion of the site did not mean that finishing the task was going to be easy.

On the contrary, the heat definitely became a factor. The average heat category (CAT) reached the top CAT 5 before midmorning, and the average soldier's uniform shirt was soaked with sweat before 1000. By 1300, the heat was almost unbearable. It quickly became obvious that the 20-minute work, 40-minute rest cycle needed strict enforcement to prevent heat casualties. "Sir, the Saudi Desert was a winter vacation compared to this heat; I've never seen any thing like it" – one soldier uttered while downing a bottle of water. Nevertheless, within a day, the platoon's soldiers were prepared to receive the ini-

tial fuel drop needed to "kick start" Cobra Gold '97. The exercise was definitely starting off on the right foot.

From the initial fuel drop and throughout the exercise, the only puzzling issue that the POL platoon faced was the gap in communication between the soldiers receiving the fuel and the Thai contractors delivering the fuel. Try to imagine a group of people standing around smiling at each other but having no idea what each other is saying. Also, the Thai fuel fittings are not compatible with what the US Army uses. Apparently the Thai contractors knew this, because the contractors always managed to bring along one vehicle converted to work with US fuel fittings. For some reason, that vehicle seemed the last one to show up. Once the converted vehicle arrived, all fuel was transferred from the other vehicles into the converted vehicle, which, in turn, pumped the fuel into the FSSP. Not very efficient, but it worked. Nonetheless, this "communication gap" proved an invaluable learning experience for future overseas operations.

The water platoon set up operations at Camp Akathosarod and began production with the mission to provide water for three dining facilities, the mobile Army surgical hospital, shower facilities on the base camp, and a laundry facility. This was a fairly large mission for 10 soldiers, two-3,000-gallon Reverse Osmosis Water Purification Units (ROWPUs), and two 3,000-gallon semitrailer-mounted fabric tanks (SMFTs).

First Challenge

The first challenge came when the main body arrived. Quickly, the water treatment specialists realized that the 10 shower facilities that supported the main body were critically low on water and no source could be found. In a matter of hours, the section was in full production – no problem for a 3,000-gallon ROWPU. The nightmare was in the distribution: the 3,000-gallon SMFT had 15 different locations to service, 8 daily, 7 every other day, with 3 locations on Camp Narasuan. A SMFT takes about 45 minutes to fill and about the same to download. With driving time in between filling and unloading the SMFT, each mission required about two hours. Continuous operations began.

A new mission requirement came a week after the main body had arrived. Bottled water was no longer available for consumption, so everyone was to switch to ROWPU water immediately. By now, the total supported personnel count was more than 2,000, and each person was consuming about two gallons of water per day. The water section was again the focus. Not only was the SMFT continuing operations, but units were coming to the water site to fill water containers for consumption. Nevertheless, the section never faltered and continued to provide outstanding support with minimum personnel.

Limitless Customer Service

Throughout Exercise Cobra Gold '97, the water platoon produced and issued more than 450,000 gallons of potable water. Also, the water platoon provided other units the equipment to store their own water. The POL platoon issued more than 100,000 gallons of JP8, 5,000 gallons of diesel fuel, and 2,200 gallons of MOGAS. These two platoons exemplify how substantial the Army's logistics assets are and how important limitless customer service is in the logistics environment.

LT Sean L. Kaul is a Platoon Leader in the 40th Supply and Service Company, 524th Corps Support Battalion, Schofield Barracks, Hawaii. He is a graduate of North Carolina State University with a bachelor of arts degree in communication. His military education includes the Armor Officer Basic Course, Scout Platoon Leaders Course, Supply and Service Officer Management Course, Strategic Deployment Course, Nuclear, Biological and Chemical School and Air Assault School.

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1st COSCOM Battalion Task Force EXEVAL

COL Jesus A. Mangual *MAJ Larry D. Wyche*

If you think National Training Center (NTC) and Joint Readiness Training Center (JRTC) rotations are tough, then you have not participated in a 1st Corps Support Command (COSCOM) Battalion Task Force External Evaluation (EXEVAL) at Fort Bragg, NC. The parallels in planning and executing an EXEVAL are almost the same as a real-world deployment. The only difference: the battalion "deploys" to the fictitious island of Aragon, which looks very similar to the training areas on post.

Planning by the 1st COSCOM staff begins as early as six months before the 14-day exercise to ensure supporting units outside the COSCOM are available for the evaluation. Requirements for an EXEVAL include identifying and training an observer/controller (O/C) team that consists of a corps support group (-); an opposing force (OPFOR), usually provided by an element of the 82d Airborne Division; and an outload support battalion. Once these units agree to participate, they are fully integrated into the scenario.

USAR and ARNG Add Realism

The US Army Reserve (USAR) and Army National Guard (ARNG) units regularly send elements to add realism to the scenario and to meet Reserve Component annual training requirements. The USAR and ARNG have sent Military Police (MP) and Air Defense Artillery (ADA) units to the EXEVALs. Both normally would augment active duty MP and ADA units in a real-world deployment. Soldiers from COSCOM, several corps support battalions (CSBs) and corps support groups (CSGs) actively participate in the EXEVAL. In all, more than 1,500 soldiers conduct one EXEVAL.

After the COSCOM staff identifies support units, the EXEVAL planners coordinate all transportation requirements to move the task force (TF) by air, sea, rail and land. The COSCOM staff schedules aircraft for initial airborne operations and the air-landings of personnel and equipment. Planners also contact installations, such as Fort Eustis, VA, and Sunny Point, NC, to coordinate requirements for sea vessels to transport personnel and equipment. Rail and land movement also requires detailed planning and coordination. Detailed coordination with the movement control center (MCC) is critical in obtaining road clearances. Traveling on the roads of North Carolina requires road clearances to avoid low bridges and to track convoys during their movement.

Several months before the EXEVAL, the 1st COSCOM commander approves the training objectives for evaluating the TF commander. These objectives directly correlate to the battalion's mission essential task list (METL).

The 264th CSB, part of the 46th CSG (Airborne), conducted the most recent EXEVAL in March 1997. The 264th CSB, a very diverse battalion that supports the XVIII Airborne Corps, can provide many classes of supply. The battalion consists of 264th Headquarters and Headquarters Company (HHC), 259th Field Service Company, 364th Supply Company, 503d Maintenance Company, and the 600th and 623d Quartermaster Companies (Riggers). About 500 soldiers from the battalion deployed to the local training area to test their METL proficiency. Some of the battalion's training objectives follow:

- Perform all METL tasks.
- Conduct an X-hour planning sequence.
- Move the entire TF through unit loading area control center and corps loading area control center operations.
- Conduct an N-hour sequence.
- Deploy by road, sea, air and rail.
- Employ the TF in a tactical scenario to exercise all the BOS in a doctrinally correct manner.
- Conduct airborne assault, Container Delivery System, and slingload operations.
- Continue installation and real-world deployment support.
- Exercise 1st COSCOM, group and battalion command and control.

About two weeks before X-hour, the COSCOM G2 gave the 46th CSG a series of intelligence summaries. The battalion S2 analyzed the intelligence reports and forwarded them to the 264th CSB commander. The summaries outlined the political situation on the island of Aragon, explained the US Army's involvement, and stated the political and military objectives.

By February 1997, the 46th CSG staff gave the 264th CSB commander an operation plan on the potential deployment to Aragon. By this time, the battalion executive officer (XO) and his staff were already well into the deployment planning phase of the operation.

Initiation of X-hour began in the early morning hours of March 7, and Phase 1 Predeployment/Cri-

sis Action Planning also began. These actions indicated receipt of the strategic warning order. All emergency operation centers (EOCs) were activated from group to company levels, and the COSCOM activated the exercise control center.

The battalion XO made sure the TF had developed a solid mission plan to deploy a force to Aragon. The XO's ability to organize and guide the staff in the decision-making process helped guarantee the operation's success. That same process became the foundation for completing the operation plan in time for commanders to begin the deployment. Parallel planning between the staffs, from the COSCOM to company level, became essential.

Perhaps the biggest challenge for the battalion staff, now juggling several balls, was developing the operation order while also finalizing all deployment requirements. Because the mission analysis was an ongoing process, the operations order changed up until the day of deployment.

Soldiers from the 264th Corps Support Battalion tie down and cover all glass on vehicles for rail deployment.

Changes included validating methods of soldier transportation, finalizing soldier readiness checks, changing the Automated Unit Equipment Listing (AUEL), and identifying additional shipping materials (such as blocking, bracing and shoring) required to move the unit's equipment.

Actual TF deployment began with launching the N-hour sequence March 10 at 0200 hours. Alert rosters were activated and the battalion was recalled within hours.

Equipment Transport Into Theater

Company personnel diligently worked in their motor pools to complete required maintenance and other preparations to transport equipment into theater. The battalion EOC directed the companies to move vehicles and equipment from the unit loading area control center (ULACC) to the corps loading area control center (CLACC) for final inspections. (By the time a unit moves to the CLACC, all deficiencies must be corrected.)

First in line to deploy was the HHC, 264th CSB. These 264th soldiers performed airborne operations via C-130 cargo aircraft, parachuting their assault command post (ACP) onto the island of Aragon. The ACP package, led by the battalion support operations officer, consisted of 10 soldiers and 3 command and control vehicles.

Once on the ground, the ACP immediately established communication with the intermediate staging base (ISB). The headquarters' remaining soldiers and equipment were then airdropped on Sicily Drop Zone. From the drop zone, the remaining soldiers convoyed to the ISB and then to the tactical assembly area (TAA).

Convoy operations continued during an 18-hour period as the 259th Field Service Company and the 600th and 623d Quartermaster Companies (Rigger) convoyed to the ISB. Convoy operations were just as tough as the other means of deployment. Convoy commanders had to worry about air attacks and ambushes on the route. Security was a priority.

Adding even more realism to the operation, the 364th Supply Company convoyed more than 170 miles to the seaport of embarkation (SPOE) at Fort Eustis, VA. Soldiers physically loaded equipment onto ships for transport to theater. The ships traveled along the coast of North Carolina to the seaport of debarkation (SPOD) at Sunny Point, NC, just as if the EXEVAL were a real-world deployment. "We rolled off the ship directly into the ocean and over the shore. No ramps: straight into the sand," reported the 364th Company commander. Elements of the 364th then moved from the SPOD to the ISB and linked up with the rest of the battalion.

The 503d Maintenance Company used the final mode of transportation: rail. The 503d soldiers loaded

their vehicles onto rail cars that left post and arrived in theater after the soldiers. Soldiers had to load and brace all equipment on the rail cars exactly as in a deployment overseas or to a training center. The 503d offloaded their vehicles from the rails and convoyed to the ISB to link up with the rest of the battalion. From the ISB, the battalion moved into the TAA and established base clusters.

If the mission required, both the 364th and 503d could drop their forcible entry packages to provide limited combat service support (CSS) capability during the initial stages of the deployment. The battalion TF Assault Command Post from the HHC 264th CSB would coordinate all logistical needs of the force that the 364th and the 503d would provide on a limited basis.

Many units operated behind the scenes, carrying out tasks required for the TF deployment. The supporting units played a major role, as they would in a real-world deployment.

The outload support battalion, the 189th CSB which is the 264th CSB's sister battalion, provided hundreds of soldiers to assist in deploying the 264th CSB. The 189th CSB inspected equipment loads, conducted vehicle inspections and provided gate guards at the ULACC. Dozens of 189th CSB soldiers assisted in rigging equipment for deployment by air. The 189th CSB also provided personal equipment for the TF's shortfalls. Technical and wrecker support was essential for additional maintenance for the TF. The outload support was valuable to the 264th CSB because it freed up the 264th's personnel to conduct necessary deployment preparation.

Critical Role

Likewise, the 507th CSG played a critical role in the deployment's success. The 507th was charged with running the deployment control center, responsible for tracking the TF's deployment. The CLACC operation also fell on the 507th's shoulders. The CLACC inspected and approved about 200 pieces of equipment for onward movement to the island of Aragon. Last but not least, the 507th established the port support activity and the intermediate rest stops to and from the ports.

When the deployment phase was complete, the TF's biggest challenge was ahead. Now, the TF had to protect its forces while accomplishing its mission of providing several classes of supply and services such as water, bulk and packaged petroleum, oils and lubricants; direct support maintenance; laundry; clothing renovation and parachute maintenance support.

Once in the TAA, the TF commander had to ensure protection of the force, and key facilities and lines of communication within the logistics support area. A detailed rear operations plan met that challenge. Failure to develop a detailed force protection plan would result in unnecessary loss of lives and would curtail a unit's ability to complete its mission in a real-world deployment. The EXEVAL rear operations plan identified base and base cluster commanders and critical tasks for protecting the soldiers and equipment. The group commander emphasized force protection as the "cornerstone of success on the battlefield that must remain in the very top of a unit commander's priority list."

With the task force dispersed over the island, several company commanders found themselves serving as base commanders. Now, the company commander had the additional responsibility of protecting several other companies as well as his own. This is where detailed planning paid off. Once force protection initiatives are implemented, units can concentrate on their mission to provide support.

Other challenges were similar to those faced at JRTC and NTC rotations. Once on the ground, unit representatives had to contend with the media and the local citizens. Therefore, several meetings were arranged with the local military leadership and key political figures such as town mayors and police chiefs.

Local citizens created some concern for the TF commander, but his primary concern became the commando brigades (OPFOR) that had committed special operations teams to disrupt, delay and destroy logistical nodes. On several occasions, the commandos were able to disrupt CSS operations. This forced the units to conduct personnel and equipment evacuation operations. As is the case in the training centers, units were not allowed to receive personnel and equipment replacements until properly reported as casualties or killed in action (KIA) through the S1/G1 channels. Replacements would then flow back to the units.

Throughout the operation, the TF encountered chemical attacks designed to delay logistics support for the force. Units had to conduct hasty and deliberate decontamination. In some cases, as in the 364th, the unit spent seven hours in mission oriented protective posture (MOPP) Level 4 gear. Units had to simultaneously continue their missions and conduct decontamination operations. Operating in a chemical environment under the threat of constant enemy attack added tremendous stress to units and commanders.

Protecting the force was tough, but the TF was able to balance protecting the force with providing logistics support. Providing CSS was the TF mission, but protecting the force also was a 24-hour operation.

Repair Parts Supply

Located with HHC in Base Alpha, the 503d provided direct support maintenance and repair parts supply. The company's operations included its supply support activity (SSA), and the unit received and processed jobs in the field while simultaneously participating in the EXEVAL.

Collocated at Base Alpha was the 259th. The 259th operated two shower points in dispersed locations, ran a laundry point and a renovation site. Such operations are essential to the morale and welfare of the soldiers on deployment.

The 364th was located at Base Bravo and used its Reverse Osmosis Water Purification Unit (ROWPU) to produce and distribute water throughout the area of operations. The unit also set up its entire SSA, established a forward arm and refuel point and Class III (petroleum, oils and lubricants) bulk fuel point, and supplied the force with Class II (general supplies) and IV (construction and barrier materiel) support. The bulk fuel point and the SSA required large amounts of land, which forced the company to plan use of their weapons to the maximum effective range.

Noncommissioned officers and officers inspect railcars to make sure all vehicles are properly tied down.

Located 15 miles from the TF headquarters, the 600th and 623d were busy providing parachute repair support at Base Echo. The remoteness of Base Echo required additional support from the 189th CSB to operate a re-transmission site. This was the first time the two rigging companies conducted their operations in the field. The highly successful operation fully integrated the rigging companies into the tactical situation on the battlefield.

Running split operations to support ongoing exercises at the JRTC and White Sands, NM, compounded the TF's support challenges. Several soldiers were tasked to support JRTC rotations and concurrent missions at White Sands. This depleted the manpower from the 264th CSB, but not the unit's combat effectiveness.

Operational Redeployment

When the call came for the operational redeployment, the TF staff had to prepare and brief the redeployment/change of mission within hours. Because of the experience gained from the early stages of the exercise, an operations order was issued within hours, and the change of mission was successfully accomplished.

Fatigue set in among the soldiers 11 days into the exercise. Therefore, the O/Cs paid close attention to the redeployment. They carefully monitored for safety violations and acts that could harm soldiers or equipment. However, the 264th's leaders had properly trained their soldiers in correct safety procedures.

The same O/Cs played a critical role in the EXEVAL's success. An O/C package provided a candid training assessment that included a well-documented report with video coverage. The number of requirements meant creating a package that involved more than 500 soldiers to perform as camera teams, OPFOR, civilian role-players, a terrain model team, an after action review (AAR) site preparation team and many other roles.

Actual evaluations began when the TF went into X-hour. The O/C packages consisted of 8- to 15-soldier teams for each company. All O/Cs remained with their respective units throughout the exercise and conducted informal AARs after each major training event. The O/Cs were a great training multiplier. They provided the leaders and soldiers with immediate feedback on all actions. A total of three formal AARs were conducted, requiring considerable preparation by the O/C staff.

The EXEVAL provided the battalion an essential and detailed training assessment. Success or failure depended on the unit's ability to accomplish its mission in a tactical environment while simultaneously protecting its forces.

The EXEVAL helped commanders identify shortfalls in training. One such shortfall was nuclear, biological, chemical (NBC) preparation. The group commander identified NBC as "the greatest weakness in CSB units." Therefore, training must be modified to safeguard soldiers' lives in actual deployments. Force protection initiatives were also examined. In real-world deployments, terrorism has been more of a concern than an infantry attack on a CSB area of operations. As such, training was assessed and modified to counter terrorist threats and attacks.

The EVEVAL provided a great opportunity for all commanders to objectively assess their units' training. The O/Cs provide the necessary outside evaluations. All aspects, from staff planning to platoon and squad execution, were carefully evaluated.

In all, such EXEVALs are essential in training units to accomplish their missions. EXEVALs must be structured in the same way as real-world deployments and missions. This will ensure commanders and soldiers know what to expect when called on to do what they do best – provide combat service support.

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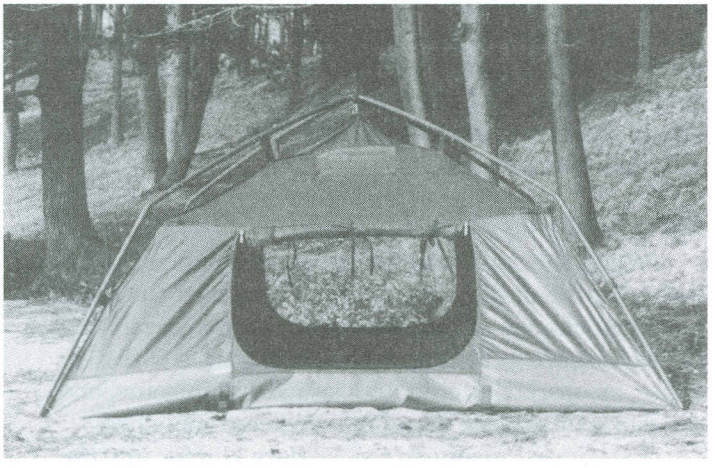
Soldier Crew Tent for All Units

The soldier crew tent's popularity led the Army to make the shelter available to any unit. Under the Common Table of Allowances, a unit can purchase one soldier crew tent through the Defense Personnel Support Center at a cost of $1,650. The lightweight, durable shelter provides protection against environmental extremes. For more information, contact the US Army Soldier Systems Command's Product Manager-Soldier Support at DSN 256-5637 or (508) 233-5637.



Soldier Crew Tent

Quartermaster Corps Focus on Combat Soldiering Accidents

Michael L. Davis

Examples of Combat Soldiering Accidents

One soldier crushed his hand while trying to position a trailer during a unit move. Another private received minor injuries when he fell into a ditch while grounding a vehicle. A soldier injured his head when a support beam became dislodged while dismantling a tent. The soldier with the head injury was not wearing his helmet, as directed by his noncommissioned officer (NCO).

A Quartermaster received an electrical shock while standing in water after improper setup of a field generator. Another soldier burned down a tent because of not following standard procedures to light a heater. An airborne Quartermaster broke his leg after performing an improper parachute landing fall after a jump. Another soldier who was not paying attention accidentally injected himself with an injector from the nuclear, biological, chemical (NBC) equipment that he was carrying.

Before a unit's physical training (PT) run in formation, the leader did not look at the route. A soldier was seriously injured when he fell after stepping into a hole and other soldiers in the formation ran over him.

These are only a few examples of accidents that Quartermaster personnel have suffered while performing the actions categorized as combat soldiering tasks. This category covers activities in most soldiering tasks and can include physical training, parachuting, ground guiding, weapons/explosive devices, lighting/electrical injuries, heat/cold, and fire accidents. Of the top five Quartermaster Corps accident areas, combat soldiering injuries are the least discussed. The following chart shows the five major accident areas for the past eight years:

Five Most Common Quartermaster Corps Accidents

Type	FY90	FY91	FY92	FY93	FY94	FY95	FY96	FY97
Cbt Sol	21%	21%	21%	15%	18%	18%	19%	20%*
AMV	17%	25%	15%	16%	21%	22%	31%	25%*
POV	17%	11%	16%	21%	16%	20%	17%	20%*
Sports	14%	11%	17%	18%	16%	12%	10%	11%*
Mat Hdlg	08%	09%	08%	09%	11%	09%	06%	06%*

*Incomplete FY97 accident report.
These areas average 77-82% of all Quartermaster Corps accidents and 90% of all fatalities/disabling injuries.

LEGEND:
AMV – Army motor vehicle
Cbt Sol – Combat soldiering
FY – Fiscal year
Mat Hdlg – Materiel handling
POV – Privately owned vehicle

Parachuting injuries have accounted for as much as one-fifth of all Quartermaster Corps soldiering accidents in any fiscal year. Almost all of these accidents involved a soldier not following standards learned in training. Leaders need to review procedures before a jump. This is especially important for Quartermasters new to jumping and those who have not jumped in six months.

Physical training injuries have averaged 1 in 10 Quartermaster accidents in the combat soldiering category. Both inattention while running on poor surfaces and not performing proper warm-ups accounted for

most physical training injuries. When planning a run, leaders should walk the route to identify hazards. Before the run, leaders should brief the lead runners on obstacles and instruct them to call out warnings, especially if solders are running in the dark. Leaders must also identify newly assigned soldiers and provide separate training until new soldiers are acclimated. Physical training must be conducted according to established physical fitness standards.

Human locomotion/movement accidents occur regularly every year. Soldiers need briefings on terrain hazards in an area. Leaders need to walk through a combat soldiering area, marking all dangers when possible and enforcing proper procedures when personnel are dismounting vehicles. Leaders must not allow personnel to jump from the back of vehicles or throw material and equipment from vehicles.

Fires cause about five percent of all Quartermaster combat soldiering accidents each year. More than 50 percent of all fires involved space heaters or other types of stoves. In almost every case, the injured soldiers did not follow proper procedures in lighting or operation, were not trained or their leaders did not supervise.

Leaders must prohibit the burning of aerosol cans or unopened Meal, Ready to Eat packages that can explode. Unauthorized fires account for many fire-related accidents. Leaders need to enforce requirements while in the field, prohibit open fires and train personnel how to operate fire extinguishers.

Set up/take down of equipment accounts for as much as seven percent of all Quartermaster combat soldiering accidents every year. The main causes for these equipment accidents were attributed to fatigue, individual failure to follow standards, personnel in a hurry, lack of supervision, lack of training, and failure to help soldiers when needed. Equipment on which Quartermaster accidents occurred during setup, movement or dismantling includes generators, pumps, Mobile Kitchen Trailers, military vans and trailers.

Electrical shocks and lightning are rare, but can still happen. As many as 4 of every 10 Quartermaster soldiers have been injured while using electrical equipment. If struck by lightning, many soldiers have a partial loss of hearing. Leaders need to be aware of the dangers of lightning and electrical shock while in the field. Leaders must remind Quartermasters not to operate electrical equipment during storms; to avoid hilltops, trees and watery areas; and to look for safe shelter when outdoors.

Cold and heat injuries during combat soldiering have averaged as much as six percent of all the Quartermaster Corps yearly accidents. Leaders must ensure that all personnel are training in identifying and preventing heat and cold injuries and also are trained in correct emergency first aid.

Weapons and pyrotechnic devices also account for injuries. All these accidents, even ones with no injuries, represent a major loss of control by leaders. Also, all directly relate to lack of training.

Ground guiding or the lack of ground guide training continues as an ongoing problem for Quartermasters. Leaders need to have both drivers and ground personnel trained in ground guide procedures.

The physical movement of supplies or equipment completes the major areas of combat soldiering accidents. Every year, Quartermasters manage to pull, break, cut or lose certain body parts as though safety were a game and they were attempting to reach a new all-time record. Parts of the body injured the most are the back, hand, foot and, of course, the head. These injuries, costly in both money and time, could have been easily avoided with planning by the individual and supervision by the leader. Enforcing the "buddy system," removing rings, planning and using proper lifting procedures could reduce these injuries.

A Hidden Accident Cause

Fatigue, while not the main cause for accidents, remains an underlying cause for many of the combat soldiering accidents reported. During planning and briefings, leaders need to cover the importance of rest plans.

Human error is a contributing factor in more than **90 percent** of all of these accidents during combat soldiering. In many, the human errors that cause the accidents directly tie into failure of individuals to perform to standards or failure of leaders to train personnel to standards or to enforce those standards. Leaders at all levels must actively look at each operation, identify hazards, enforce established standards, and use the risk management process to reduce risk for personnel and equipment.

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PROFESSIONAL READINGS

The Professional Readings section of the *Quartermaster Professional Bulletin* encourages the professional development of all Quartermasters. Titles are selected from the Quartermaster School Professional Reading List and the current Department of the Army Contemporary Military Reading List, as well as other notable sources. Short reviews from the field are always welcome. The following book reviews are excerpts from reports by recent graduates of the Quartermaster Officer Basic Course at Fort Lee, VA.

Bloods: An Oral History of the Vietnam War By Black Veterans

Wallace Terry, Ballantine Books: New York, 1992.

Wallace Terry has produced documentary films on black Marines for the US Marine Corps and served as a race relations consultant to General David C. Jones when Jones was commanding general of the US Air Force in Europe. His thesis is that the loyalty of the black Vietnam War veteran stood a greater test on the battlefield than did the loyalty of any other US soldier in Vietnam. The black soldier's patriotism begs a special salute because his experience is definitely unique. The author, who was in Vietnam himself from 1967 through 1969, develops and supports his thesis by writing an oral history of 20 American blacks who fought in the Vietnam war. The black veterans talk about fighting two wars: Vietnam and racism. The Vietnam war was the first to fully integrate blacks into combat and use these soldiers in leadership positions. Terry used a representative cross-section of the black combat force: enlisted men, noncommissioned officers and commissioned officers, soldiers, sailors, airmen and marines. He interviewed those for whom the war had a devastating impact and those for whom the war basically was an opportunity to advance in a career dedicated to protecting US interests. This book reminds officers of the strides that the military has made in terms of equality. *—LT Renysha Y. Brown*

The Longest Day: June 6, 1944

Cornelius Ryan, Simon & Schuster: New York, 1959.

Cornelius Ryan was a preeminent war correspondent who flew 14 bombing missions with the Eighth and Ninth US Air Forces. He also covered the D-Day landing and the advance of General George S. Patton's Third Army across France and Germany. The Irish author makes the point that D-Day had an impact on everyone, whether military personnel or the civilians who had to hear the war sounds that surrounded them. He retells the story of the battle that freed Europe from Hitler and his Nazi Germany. He describes all sides of World War II, including daily lifestyles of the civilians.

Logistics played a vital role during the invasion of Normandy. The author says that key leaders, however, did not communicate several times with the logisticians. For example, they did not take into consideration whether the supplies would be ready at the battle site when the troops landed on D-Day. There were problems even when the supplies were at the sites. Chow lines were incredibly long and the troops had to wait long hours to eat. However, the logisticians did their part and had the supplies ready to go before and during the invasion. The author carefully described logistics and how they were lacking or not properly coordinated at the right times. This is sometimes overlooked by other authors. As logisticians, we need to look at history's mistakes and realize what needs to be done to make things run more smoothly. If logistics are at the right time and place, then supplies will not be the main focus of battles. A heavier concentration of effort would then be on the battles themselves. *—LT Kristin A. Anderson*

On Killing, The Psychological Cost of Learning to Kill in War and Society

LTC David Grossman, Little, Brown and Co.: NY, 1995.

A former airborne Ranger, LTC David Grossman knows about the training an Army soldier must go through to become combat-ready. He is a former professor of psychology at the United States Military Academy at West Point, NY, and currently professor of military science at Arkansas State University. The author's background in psychology provides a platform for him to launch this book, his first. He theorizes that humans instinctively loathe killing. However, the activities that enter the world with the continuous advancement in technology are desensitizing the soldiers of today's Army. Each chapter discusses various wars, beginning with the US Civil War and moving through the Korean and Vietnam wars, and finally ending with the violence in today's society. *—LT Charles A. Washburn*

Developing Civilians for Force XXI

Emory Greene

The Army has accomplished much in the past several years, but challenges still remain as we integrate emerging technologies with quality people to build a more lethal, survivable Force XXI. Civilians are now assuming roles performed in the past by military counterparts. The Logistics Management Proponency Office (LogPro) at Fort Lee, VA, will ensure the availability of a well-trained and experienced logistics civilian workforce equipped with the right skills to support the Force XXI Army.

This results in rapidly expanding opportunities in training and developmental assignments. The Functional Chief Representative for the Supply Management Career Program (SMCP) (CP13) urges all CP13 (Supply) careerists to actively participate in their own career management. At each stage in a civilian career, training and developmental assignments improve job performance and build qualifications for advancement. The career model on the following page is a tool to assist in developing career goals. Use the model to evaluate career status, goals and preparation for the future.

The LogPro will assist in capitalizing on the many training and developmental opportunities available in the Army and civilian communities. Get involved and use LogPro! For assistance, phone Emory Greene, Supply Proponency Specialist, at DSN 539-4139 or (804) 765-4139.

LEGEND for the Career Model

AAC	Army Acquisition Corps		ITO	Installation Travel Officer
ACPM	Activity Career Program Manager		LEAD	Leadership Education and Development
ALMC	Army Logistics Management College		LEAF	Logistics Education Assistance Fund
AMSC	Army Management Staff College		LMDC	Logistics Management Development Course
APEX	Army Approved Exercise		Log	Logistics
APM	Army Program Manager		MACOM	Major Army Command
CDG	Competitive Development Group		Mgt	Management
CLOAC	Combined Logistics Officer Advanced Course		MSC	Major Subordinate Command
CP	Career Program		Nat	National
DA	Department of the Army		OLE	Organizational Leadership for Executives
DATMC	Department of the Army Transportation Movement Center		ORD	Ordnance
DAU	Defense Acquisition University		PEO	Program Executive Officer
DOD	Department of Defense		Pg	Program
DOL	Director of Logistics		PM	Project Manager
EEO	Equal Employment Opportunity		QM	Quartermaster
Exec	Executive		Sec	Secretary
Fed	Federal		SES	Senior Executive Service
GLLEAF	Graduate Level Logistics Education Assistance Fund		SSC	Senior Service College
GS	General Services		Supv	Supervisor
HQ	Headquarters		Trans	Transportation
ILS	Integrated Logistics Support		TWI	Training With Industry
IMMC	Integrated Materiel Management Course			

SUPPLY/MAINTENANCE/TRANSPORTATION MANAGEMENT CAREER MODEL

CAREER PHASE	INTERN / * PMI / SPECIALIST				MANAGEMENT			EXECUTIVE
GRADE	GS-5/7	GS-9	GS-11	GS-12	GS-13	GS-14	GS-15	SES
Training & Development (Core)	Master Intern Training Plan - Intern Development - Officers Basic Course (QM, Ord, Trans) - Functional Courses (ALMC, DAU, etc) - CP Specific - Job Rotation * (PMI) Presidential Management Intern		- LMDC - LEAD - DATMC - CLOAC - AMSC - TWI	- AMSC - LEDC - LMDC - LEAD - CLOAC - TWI	- LEDC - PME I & II - OLE - AMSC - SSC - TWI	- PME I & II - AMSC - OLE - SSC - Exec Leadership - TWI	- Fed Executive Institute - Brooking Institute - Nat Sec Exec Pg - TWI - SSC	- Orientation Conference - Force Management - Leadership Development Program - EEO - DOD SES APEX
	- Self Development		- Additional skill enhancing courses (ILS, Provisioning, Contracting, Supv/Mgt, Cross Functional, etc.) - Developmental assignment (Cross Functional/DA, MACOM, MSC, Installation, etc.) - University training (LEAF, GLLEAF, self development, etc.) - Professional societies (Society of Logistics Engineers (SOLE), Volunteer Societies, Community, etc.)					
Typical Positions (Line/Staff)	- Trainee - Functional Specialist - Supply Specialist - Maintenance Specialist - Transportation Specialist - Assistant Project Officer			- Section Leaders - Functional Specialist - Project Officer - Team Leader - Trans Officer	- Branch Chief - Division Chief - Sr. Project Officer - Deputy Director - ITO - Team Leader	- Branch Chief - Division Chief - Deputy Director - Director - DOL - PM Log Chief	- Division Chief - Deputy Director - Director - DOL - APM Logistics	- Director - Center Director - IMMC Director - HQ Deputy - Assistant Director
CDG/AAC Position	ACPM Directed Developmental Assignments		Developmental Assignments - ILS Manager	CDG/AAC Developmental Assignments - ILS Manager - ILS Staff	CDG/AAC Developmental Assignments - ILS Manager - Project Leader	- Senior Logistician - Senior PM/PEO Logistician - Deputy PM	- Senior Logistician - Senior PM/PEO Logistician - Deputy IMMC - PM	- Director - Center Director - HQ Deputy - Assistant Director

Mobilization: Putting the Logistics Characteristics to Work

MAJ John A. Leggieri *CPT Rebecca P. Leggieri*

Mobilization of US Army Reserve units and soldiers to support *Operation Joint Guard* in Bosnia challenges logisticians at all levels. Logisticians can succeed at this formidable task by applying the logistics characteristics outlined in FM 100-5 (Operations). ***Anticipation, Integration, Continuity, Responsiveness***, and ***Improvisation*** are the logisticians' foundation for a successful mobilization.

Anticipation means estimating future logistical demands. Logisticians follow guidance in US Army Forces Command (FORSCOM) Regulation 500-3-3, Volume III, Reserve Component Unit Commander's Handbook. Chapter 4 outlines all the logistical activities for a unit's mobilization. Logisticians must anticipate requirements for home station lodging, subsistence, equipment maintenance, contract support, repair part supply, and equipment accountability. The FORSCOM regulation dictates developing a comprehensive logistics data file. This all-encompassing file houses unit movement data, load plans, equipment retrieval blueprints, Classes II (general supplies), III (petroleum, oils and lubricants), IV (construction and barrier materiel), V (ammunition), VII (major end items), VIII (medical supplies) and IX (repair parts) requisitions, and facility transfer plans.

Phase I, planning, is the cornerstone of mobilization. Accurate ***Anticipation*** in Phase I reduces turmoil and stress. Logisticians throughout the chain of command improve plans by working closely together and continually updating the data file. Frequent telephone communications, computer linkups, and site visits to subordinate units help the unit logistician anticipate needs. Updated logistics files provide a current information base to implement during mobilization.

Integration ensures that logistical support matches the commander's overall operational plan. Logisticians carefully review the commander's mobilization plan and develop a logistical strategy. Logisticians integrate unit moves, billeting, mess support, equipment inventories, supply deliveries, and contract agreements into the commander's mobilization scheme. Integration of logistical and operational concepts during Phase I guarantees smooth execution during Phase II, alert, and Phase III, home station.

Integration also involves close coordination between logisticians and operators at the company, battalion, brigade or group, Regional Support Group (RSG), Regional Support Command (RSC), and United States Army Reserve Command (USARC). Since information normally flows through operations channels, logisticians and operators communicate daily, if not hourly, about the mobilization status. Information moves both ways.

The Postmobilization Training and Support Requirements (PTSR), FORSCOM Form 319-R, is the climax of coordination between logisticians, operators and trainers in Phase I. Each training task identified on the PTSR re-

Photograph by SFC James Durr

Critical boxes of equipment and supplies await soldiers from the 4013th Garrison Support Unit (90th Regional Support Command) before movement to the power projection platform.

quires logistical support. Ranges require ammunition, vehicle convoys need fuel, and field training exercises demand equipment. Environmental factors, such as changing modification tables of equipment (MTOEs) and power projection platforms (mobilization stations), create opportunities for trainers and logisticians to interface and validate mobilization plans.

Continuity provides uninterrupted supply and service support to the mobilizing force. Logisticians must ensure that soldiers have a hot meal, shower, place to sleep, proper quantities of individual clothing and organizational clothing and equipment (OCIE), and transportation. ***Continuity*** of support involves logisticians at each level, as well as the supporting installation. Each organization provides something unique to the mobilizing soldier, and all overlap to furnish constant and unbroken logistical support.

During a company mobilization, the battalion, brigade, group, or RSG give technical assistance and aid in procuring supplies and services. The RSC arranges commercial airline and bus transportation, government bill of lading moves, area maintenance support, transfer of required equipment and OCIE, funding of billeting and feeding plans, and also processes requisitions for supplies. The RSC, along with the unit, coordinates with the power projection platform to render a smooth transition to active duty. USARC relays logistical guidance from FORSCOM, answers high-level logistical questions and can provide equipment or assets from the entire Army reserves. The supporting installation places high priority on mobilization requisitions and works to put equipment and supplies into the soldier's hands as fast as possible. PTSR completion ensures logistical support upon arrival at the power projection platform.

Responsiveness enables logisticians to react rapidly and modify mobilization plans. Logistical requirements frequently change in fast-paced mobilization operations. Time is the most valuable commodity during reserve unit mobilizations. Today's units mobilized for *Operation Joint Guard* normally only spend three days in Phase III, home station. Responsive logisticians immediately get the right item to the correct place on time.

Close coordination between logisticians at all levels speeds response to requirements. Continual communication by telephone, FAX, E-mail, and face-to-face visits are vital during Phase III, home station. Last-minute alterations in personnel and equipment requirements are often overcome by logisticians communicating, working smartly, and knowing about equipment available at other units.

Improvisation is the talent to make do with the materials at hand. Logisticians must be able to fill a logistical shortfall, even when there appears to be no way of supplying it. Mobilizations force logisticians to think outside of the conventional supply and service process. For example, a shortage of helmet headbands cannot be filled through normal channels two days before mobilization. The improvisational logistician locally purchases the items at a clothing sales store 200 miles from the US Army Reserve center. In another example, FORSCOM directs a unit to deploy with two carpenter's tool kits, neither organic MTOE items. An improvisational logistician coordinates with several other RSC units and transfers the equipment to support the Army's requirement.

Last-minute logistical changes are routine during mobilization. Units revise equipment transportation needs, additional OCIE shortages are discovered, vehicles become deadlined, caterers fail to provide sufficient quantities of food, and airline flight schedules are modified. Often, these last-minute revisions occur because of a lack of ***anticipation*** during Phase I planning. Improvisational logisticians have the knack for overcoming such a lack.

Logisticians following the direction in FORSCOM Regulation 500-3-3, Volume III, Chapter 4, will use their improvisation skills much less than those who do not. The regulation clearly attempts to anticipate all logistical requirements to quickly and accurately mobilize a reserve unit. The document acts as a "how to" manual.

Unit mobilizations tax the abilities of logisticians at all levels. Using the logistics characteristics greatly improves execution of mobilization operations. Logisticians anticipate requirements in the planning phase by applying FORSCOM Regulation 500-3-3. Close coordination with operations and training specialists achieves integration of logistical support. Each level of command joins forces for continuity of the support plan. Responsive logisticians stand ready to react quickly to the changing mobilization situation. Finally, logisticians at each level use their skills of improvisation to make the impossible seem possible.

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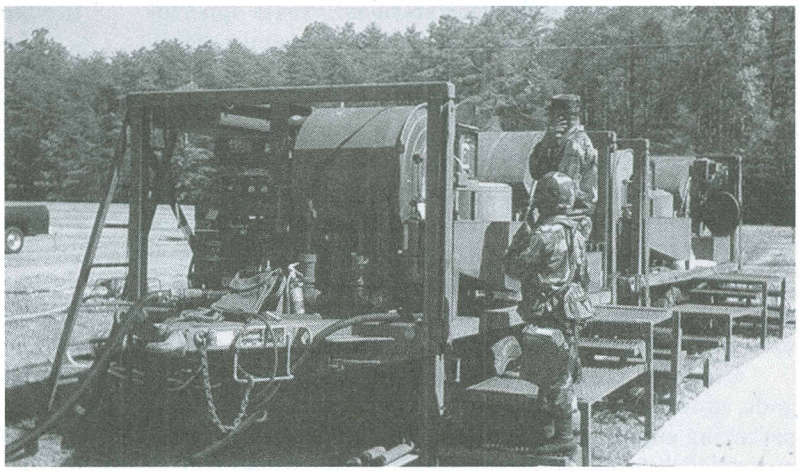
Laundry and Shower's Importance

LT Everette B. Penn

Since April 1917, the Quartermaster Corps has provided laundry and shower services to soldiers in peace and in war. During World War II, a training publication stated this about a laundry and bath company: "No other type of unit contributes more to the physical well being and morale of the men." Today the US Army's laundry and shower companies are highly mobile, technical and responsive to the needs of the soldiers in the field.

This article provides results of a survey given to soldiers during POLEX 97, a field exercise at Fort A. P. Hill, VA, last May and June. Survey results give Quartermasters an evaluation of laundry and shower services, indicate how services affected morale during POLEX 97, and show frequency of use.



Laundry Operations

Mission

POLEX 97 was a petroleum transportation exercise at several bases in the eastern US during Summer 1997. The 445th Quartermaster Company (Forward Support) (Direct Support), a US Army Reserve (USAR) unit from Trenton, NJ, provided laundry, shower and renovation services to 243 soldiers at Fort A. P. Hill, 24 May through 7 Jun 97.

The 445th Quartermaster Company was reorganized for POLEX 97 under the 325th Quartermaster Battalion of Belton, MO. After a six-hour convoy, the 445th arrived at Fort A.P. Hill, VA, with the mission of being totally operational in 24 hours. The task was difficult amid equipment shortages and Environmental Protection Agency (EPA) requirements. However, the 445th was prepared to receive customers by the designated deadline.

Shower services consisted of 18 hours of operation from 0500 through 2300, with three, one-hour breaks for preventive maintenance checks and services. The water temperature was between 105 and 110 degrees Fahrenheit. Because of slow traffic, time limits for soldiers in the shower were flexible. These extra comforts were provided: a thorough shower cleaning once every three hours or as needed, a heated changing tent, as well as cold drinks and movies. The shower unit had nine showerheads and a field-expedient sewer system in order to comply with EPA requirements. In the seven days that showers were operational, soldiers took 369 showers.

Laundry and renovation services were provided by three laundry trailers and three sewing machines. Both laundry and renovation services operated with a 24-hour turnaround. An in-place sewage system disposed of wastewater. In the eight days that laundry and renovation services were provided, 250 bundles were washed and 130 pieces were renovated.

In addition to the laundry, shower and renovation capability, the unit has its own mechanics and food service personnel. The 445th provided units in the 325th Battalion with two A-Rations per day and one Meal, Ready-to-Eat per day.

Providing field services for a highly mobile mission such as POLEX 97 dictated a flexible work schedule. When customer traffic was slow, the 425th conducted military occupational specialty (MOS) classes, nuclear, biological and chemical drills, defense perimeter operations and individual soldier skills training.

The Survey

The laundry and shower survey during POLEX 97 consisted of these areas: demographic information; rank, unit, Army component and MOS; familiarity with shower and laundry services in the past; the effect of laundry and shower services on the unit's and the individual soldier's morale; satisfaction with services; and frequency of use. Seventeen questions were asked and participation was voluntary. The company commanders of the five units in POLEX 97 received the survey. Because the 445th was providing services, the unit's 41 soldiers were not included in the research.

Demographics of Survey Participants		
Rank	Number	Percent
Enlisted (E-1 to E-4) Soldiers	17	27
Noncommissioned Officer (E-5 to E-8)	33	53
Officer (O1 to O3)	9	14
Unknown	3	06
	62	100

Of a total of 228 surveys, 62 were returned. All soldiers were in the USAR, primarily with MOSs in supply and transportation. The return rate was only 27 percent, partly because units were preparing to leave Fort A.P. Hill when the survey was administered. However, a measurable distribution of soldiers exists with 27 percent enlisted, 53 percent noncommissioned officers (NCOs) and 14 percent officers. Most survey respondents were NCOs who are first-line supervisors with years of experience.

Finding out the familiarity of soldiers with field services was important because their responses provide information on the availability and use of field service units in the Army. When asked if the soldier had used field showers before POLEX 97, 44 soldiers or 70 percent said "yes." Seventeen soldiers or 30 percent said "no." When asked if the soldier had used field laundry services before POLEX 97, 36 respondents or 58 percent said "yes," and 26 or 42 percent said "no." For the majority who answered "yes," their laundry and shower experiences were mostly during *Operation Desert Storm* or an overseas field operation.

Here is the breakdown of answers to key shower and laundry questions:

How often did you use field shower services?		
Frequency	Number	Percent
Once a day	36	58
Every other day	18	29
Twice a week	3	4
Once during POLEX	4	6
Did not use	0	0
No response	1	1.6

To ask soldiers about morale and quality of services, a Likert Scale used these categories: SA = strongly agree, A = agree, D = disagree, SD = strongly disagree, and DK = do not know. These points were given to each answer: SA = 4, A = 3, D = 2 and SD = 1. Thus, a 4 was the highest score possible, and a 1 was the lowest score possible. Answers to questions about morale improving with the availability of shower and laundry services rated between 3.14 and 3.20. Answers to questions about the overall quality of services and soldier satisfaction ranged from 2.98 to 3.43.

How often did you use laundry services?		
Frequency	Number	Percent
Once a day	5	8
Every other day	14	22.6
Twice a week	8	12.9
Once during POLEX	26	41.9
Did not use	8	12.9
No response	1	1.6

Services and Morale

Overall, the survey results pointed out a high satisfaction rate with the laundry and shower services during POLEX 97. Even in a field environment, soldiers demand cleanliness and reliability. The hard work and dedication of the soldiers of the 445th Quartermaster Company preceded the soldier's response. The survey highlights improved morale of the individual soldier and the unit with the availability of laundry and shower services in the field.

Although the number of customers that the 445th served was far below its mission capability, the soldiers performed well, partly because of their school training and hands-on experience. In the past two years, the 445th has provided shower service for Stand Down Missions that service homeless veterans in New Jersey and serviced more than 4,000 soldiers at the Joint Readiness Training Center at Fort Polk, LA. Everywhere the 445th has performed its mission, soldiers are amazed to receive a hot shower and clean laundry services in a field environment.

Soldiers in laundry and shower units must understand their vital role in a field environment. Understanding this role can provide the motivation for realistic battle-focused training. Often, USAR laundry and shower units are tasked with providing services but have to operate with equipment and location detractors. Such shortcomings must never lower the standard of providing safe, clean, quick and dependable field services to all soldiers.

As one of the 445th soldiers put it: Our job is to lift the morale of the soldiers who use our services.

LT Everette B. Penn, United States Army Reserve, commands the 445th Quartermaster Company, (Forward Support) (Direct Support) Trenton, New Jersey.

CAREER NEWS

Professional Development

As the Army continues to draw down, we at the Quartermaster branch, US Army Total Personnel Command (PERSCOM) would like to update Quartermasters about some new changes, developments and trends in the assignment and professional development areas. For more information about officer and noncommissioned officer issues, access the Quartermaster Home Page by typing http://www.lee.army.mil/quartermaster and then look up the appropriate Quartermaster Branch Newsletter from PERSCOM. To help enlisted soldiers keep track of PERSCOM's new communication tools, the Enlisted Personnel Management Directorate distributed a wallet-sized information card that lists a soldier's career manager's phone number, E-mail address, FAX number, and telephone interactive voice response system (IVRS) instructions and phone number. Enlisted soldiers can get their pocket cards at their servicing personnel center.

Statistics on FY97 COL, LTC, MAJ and CPT Promotion Boards

LTC Bob Chadwick, Quartermaster Branch Chief
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Everyone here at your Quartermaster Branch is proud to be a member of the Quartermaster team. We are all committed to balancing the needs of the Army and those of our officers – and their families. Access the PERSCOM Online newsletter for demographics on the most recent FY97 Colonel Promotion Board, FY97 Lieutenant Colonel Promotion Board, FY97 Major Promotion Board, and the FY97 Captain Promotion Board. This Quartermaster officer information is linked to the Quartermaster Home Page at http://www.lee.army.mil/quartermaster.

Help Yourself Before a Promotion Board Convenes

CPT Dianne Del Rosso, Future Readiness Officer
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After the first of six boards so far, I realized how very important it is for every soldier to ensure personnel files are completely up to date and accurate. Each of us has the opportunity to control, to a great degree, the picture a board member may paint of promotion potential. Our Officer Record Briefs (ORBs), photographs and microfiche are what promotion board members see. We all have the ability to check these critical components long before a board convenes. All are equally important.

Tips Before A Board:

- Request a copy of your microfiche Official Military Personnel File (OMPF) at least six months before a board through a written request (ATTN: TAPC-PDI-S) and FAX it to DSN 221-5204. Any document you cannot read and want reshot to your microfiche should be annotated on the written request. Include your full name, social security number, mailing address and signature on the request.
- Make sure your Department of the Army photograph is in your current grade and no more than five years old. Ask the most meticulous noncommissioned officer with a lot of enlisted board experience to look at your uniform to ensure that the spacing of awards, badges and brass meets AR 670-1 guidance. Your microfiche should include all documentation of authorized unit citations or badges. Remember to remove distinct unit flashes or ovals under Airborne or Air Assault wings, leadership tabs and general staff brass before the day of the photograph.
- Getting your ORB to read the way you want or to have all the right entries is not always the easiest task. This also seems time-consuming. However, ORB accuracy is very important. Work with your local Military Personnel Office or S1 to see that your ORB is accurate.
- Ensure you take a physical every five years and update this information on your ORB.

As future readiness officer, I will continue to serve as your primary point of contact for Advanced Civil Schooling, degree completion, Training With Industry, Logistics Executive Development Course/Florida Insti-

tute of Technology, Army fellowship programs, branch detail program, and functional area redesignations. I will also conduct promotion and school selection board analysis and prepare briefings on personnel issues affecting the Quartermaster officer population.

I look forward to assisting you as you apply to any of these programs. If you have any questions, please contact me.

Assignments = Army Requirements + Professional Development Needs + Personal Desires

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Our mission is to do the *right thing* for each officer, providing world-class assignment and career management to Quartermaster officers. We focus on making career management decisions based on Army requirements, personal desires and professional development needs. For each assignment, we determine the most eligible officer in grade and specialty. We provide the greatest opportunities for professional and career advancement within the boundaries of Army requirements. Please explain your personal desires during the assignment consideration process.

Army Requirements. Our smaller Army has reduced the number of continental US (CONUS) assignment locations. Assignments outside the continental US (OCONUS) have remained constant the past three years. Therefore, many officers will rotate CONUS-OCONUS-CONUS, while other officers perform consecutive overseas tours (COT). We will be fair and equitable in making OCONUS assignments. We will make OCONUS assignment decisions based on the following criteria:

- Date returned from overseas (DROS)
- Date of last short tour
- Date of last long tour
- Time on station, current tour

Please do not hesitate to contact us if you are unsure of your OCONUS vulnerability status.

Professional Development. The underlying key to lieutenant colonel promotion is completing Command and General Staff College and successfully serving in a branch-qualified position. Most officers serve in their functional area during their major/lieutenant colonel years. Additional assignments to Active Component/Reserve Component, Joint Duty, Army Staff, Training and Doctrine Command and major command-level staff positions provide more professional development opportunities. Current separation policies allow 20-year retirements and the opportunity for selective continuation for officers twice nonselected for lieutenant colonel.

Personal Desires. Each officer has his own set of personal desires that he expects his career manager to take into consideration. Some focus on location, spouse's occupation, children in their senior year of high school, sick parents, new home, type of job or serving with troops. Others take into account exceptional family member and joint domicile issues. We view *all* personal desires as important: knowing them aids us tremendously in working an assignment.

The two most common areas of consideration include the Exceptional Family Member Program and the Married Army Couples Program. You must understand, however, that both programs serve only as guidelines in the assignment process and may not always be accommodated.

- **Exceptional Family Member Program (EFMP).** This program gives soldiers a system for identifying family members' physical, emotional, educational, developmental or intellectual needs and for determining availability of treatment or educational facilities at a projected assignment location. AR 600-75 provides program guidelines. The EFMP applies to reassignments within CONUS or accompanied overseas tours. Officers enrolled in EFMP must have their exceptional family member needs reevaluated every three years. It you have not reevaluated your EFMP enrollment, please do so. If you need to enroll, then do it! We need to know your exceptional family member needs.

- **Married Army Couples Program (MACP).** This works to facilitate joint domicile of married active Army service members. AR 614-100 provides program guidelines. The program, however, does not apply to soldiers married to members of other service branches. We have a goal to assign MACP officers to the same geographical area to establish a common household. Exceptions include short tours and service school attendance.

Work with us on your next assignment. There may be times when only one assignment fits a certain officer based on Army requirements, functional area, professional development, EFMP or joint domicile needs. Fortunately, such instances rarely occur within the Quartermaster Branch. Most officers will choose among two to three assignments during the assignment process. Our goal is to make the *best* assignment decision affecting you, your family and the Army. The following diagrams will assist in determining when to contact PERSCOM for your next assignment, as well as give a snapshot of where the bulk of Quartermaster majors and lieutenant colonels are assigned.

When to Call for Next Assignment:		
PCS Window	Call PERSCOM/Update Preference Statement	Requisitions on the System for RFO
Oct–Dec	Apr	Jun
Jan–Mar	Jul	Sep
Apr–Jun	Oct	Dec
Jul–Sep	Jan	Mar

Where Quartermaster Field Grades Will Serve:		
Command	MAJ (680 Officers)	LTC (385 Officers)
FORSCOM	25%	21%
USAREUR	12%	7%
SCHOOLS	12%	4%
AC/RC	11%	3%
TRADOC	10%	13%
JOINT	9%	21%
EIGHTH ARMY-KOREA	5%	4%
USARPAC/CILHI	3%	2%
USASOC	2%	1%
USMA	2%	0%
ARSTAFF/MDW	2%	11%
AMC	2%	6%
INSCOM/ISC	1%	1%
USARSO	1%	1%
ROTC	1%	3%
USAREC	1%	1%
OPTEC	1%	1%

Lieutenant Colonel Command Boards

Minor changes affect upcoming battalion command boards. Eligible officers must designate the command categories in which they wish to compete. Each eligible officer will receive a preference sheet to be returned to the Quartermaster Branch. Combat service support battalion command boards are scheduled each November. Availability of commands varies by year group. Use the following chart as a guide to commands in your year group:

Category	Specialty	Even Year Groups	Odd Year Groups
6E Supply Category	All QM Officers	1+	10
6G Petroleum Category	92F	3*	2*
6Q Commissary Category	All QM Officers (Former 92G)	0	1+
6S Multifunctional Logistics Category	All QM Officers Functional Area 90A	30	43
6X Base Support Bn Garrison Bn/USAREC Bn	All QM Officers	Varies	Varies
* = DFO St. Louis rotates 2001, 2004, 2007 (not included in numbers above) + = Depot Commands rotate 1999, 2002, 2005			

Senior Service College

Congratulations to the 19 Quartermaster officers selected to attend Senior Service College (SSC) in FY98. Many Quartermaster officers who are high on the alternate list received letters from PERSCOM and may be activated.

Officer Assignment Opportunities in Special Operations

The US Army's 1st Special Forces Operational Detachment-Delta (1st SFOD-D) plans and conducts a broad range of special operations across the operational continuum. Opportunities for senior Quartermaster captains and majors exist. Additional command and branch-qualifying positions become available each year. Follow-on assignments include a wide variety of staff positions at Department of Defense, Joint Chief of Staff, Department of the Army, US Army Special Operations Command, US Army Combined Arms Support Command, and other joint headquarters. Logistics assignments with 1st SFOD-D provide realistic training and experiences that are both personally and professionally rewarding. Feel free to contact PERSCOM about serving in the special operations community.

Career Management Issues

Board Scrub. We use this term within PERSCOM to describe career manager actions before each board convenes. It is a special time when assignments officers, assisted by branch technicians, review every officer's board file within the zone of consideration. We follow the steps similar to the actual board process:

- The photograph is matched against the Officer Record Brief (ORB) and the microfiche. This includes verification of name, rank, social security number, awards, badges and decorations.
- Each Academic Efficiency Report and Officer Efficiency Report is read to match schools and duty titles to the ORB.

The assignment officer spends up to 10 minutes per board file, reviewing for completeness as well as deficiencies. (PERSCOM contacts officers directly for immediate correction of discrepancies.) Also, we double-check document clarity and chronological sequence of the microfiche. If a microfiche document requires a reshoot, we can ensure correctness before the board's convening date.

You assist in your pre-board scrub by requesting a copy of your microfiche not later than 90 days before each board. Take a digitized photograph and ensure all awards and badge orders are on your microfiche. Attempt to wear your current unit patch. Remember, assignment officers conduct board scrubs as a courtesy to the officer, but this does not change your individual responsibility to ensure that your records are accurate. Conduct a pre-board scrub of your microfiche, photograph and ORB, and then call your technician to update your files.

Board Scrub Key Numbers:

PERSCOM Microfiche Request: (703) 325-5204 (FAX)
DSN: 221-5204 (FAX)

Quartermaster Technician: (703) 325-8119
DSN: 221-8119
E-mail: virgilm@hoffman.army.mil

Quartermaster Branch: (703) 325-8025 (FAX)
DSN 221-8025 (FAX)

Key FY98 Board Dates:	
Board	**Date**
LTC Command Board	12–26 Nov 97
COL Command Board	20–30 Jan 98
JSO Board	22–25 Sep 98
CSC Board	3–25 Sep 98
SSC Board	7 Apr–1 May 98
CPT Board	2 Jun–2 Jul 98
MAJ Board	28 Apr–22 May 98
LTC Board	3 Mar–3 Apr 98
COL Board	4–20 Aug 98

The Truth About "3R" Assignments

CPT Rick Harney, Branch-Qualified Company Grade Assignment Officer
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In my first article as assignment officer, I will address officer concerns about "3R" assignments: *Recruiting, Reserve Officers' Training Corps (ROTC) and Active Component/Reserve Component duty*. I will begin with a brief description of each assignment and end by addressing common misconceptions I have encountered during the past few months.

US Army Recruiting Command Duty

US Army Recruiting Command (USAREC) duty is perhaps the least understood of all "3R" assignments. PERSCOM assigns officers to USAREC against branch-immaterial (01A) positions. Army policy directs we send only quality branch-qualified captains to USAREC. Besides company command, we also assign captains as battalion operations officers and to various USAREC headquarters staff positions.

PERSCOM assigns most branch-qualified captains to USAREC company command positions. All commands are high priority, two-year and nominative positions. Recruiting company locations include the continental US, Alaska, Hawaii, Germany, the Caribbean, and the Pacific Rim. The average company consists of 10 to 20 recruiting stations and 25 to 50 noncommissioned officers. The company commander not only focuses on mission, but also develops community and marketing relations within the area of responsibility.

Active Component/Reserve Component (AC/RC) Duty

Congressional mandates direct that we provide AC advisors to US Army Reserve units to improve readiness. As a result, AC/RC assignments place the second highest demand in the Army for branch-qualified captains.

Officers assigned to AC/RC (a two-year tour) serve as trainers/evaluators, readiness group advisors or on First and Fifth US Army staff. Also, officers can serve in either Quartermaster, multifunctional or branch-immaterial positions. Recent AC/RC reorganization initiatives to consolidate training, evaluating and advising functions into training support brigades will influence the number of officers placed in these assignments.

US Army Cadet Command (ROTC) Duty

ROTC duty, like USAREC, is branch-immaterial and nominative in nature. Branch-qualified captains can find themselves assigned as assistant professors of military science, and in various cadet command headquarters and ROTC region staff positions.

All assistant professors of military science assignments are three years long. Nominees must not only meet PERSCOM requirements, but also get approval from the college or university president. Most institu-

tions require an undergraduate grade point average of 2.8 or higher on a 4.0 scale. The more prestigious colleges and universities require a master's degree.

Officer Concerns About "3R" Assignments

Perception: *Recruiting company command is a "Kiss of Death" assignment.*

Fact: Outbriefs from the past two major and Command General Staff College boards clearly indicate board members view recruiting company command as a challenging assignment. As a result, officers who did well in recruiting command earned high marks from board members. With 239 recruiting commands, and many Quartermasters currently serving as commanders, it is good to know our senior leaders are acknowledging the importance and challenges of recruiting company command.

Perception: *I can obtain a free master's degree if assigned as a ROTC assistant professor of military science.*

Fact: Most colleges and universities offer some type of tuition assistance program for ROTC cadre members. The scope of duties, chain of command guidance and school policy will determine the level of interest placed on degree completion. The main purpose of a ROTC assignment is to train and mentor the Army's future leaders.

Perception: *A "3R" assignment hurts my potential for promotion, schooling and battalion command.*

Fact: A "3R" assignment in itself has no bearing on promotion, schooling and battalion command. However, consecutive non-troop assignments, average company command OERs and/or overall center of mass performance to date adversely affects potential. In fact, statistics show that approximately 75 percent of all branch-qualified captains will serve in a "3R" assignment. The key to success, however, is to do well in every assignment regardless of the circumstances.

Perception: *Quartermaster Branch receives an overabundance of "3R" assignments when compared to other branches.*

Fact: While branch-immaterial requirements have increased for FY98, at any given time more than 60 percent of branch-qualified captains still serve in Quartermaster (92Z) or multifunctional logistics (FA90) positions.

Combined Logistics Officer Advanced Course or Out of the Army

CPT Sam Russell, Non-Branch Qualified Company Grade Assignment Officer
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I am often reassigning officers at their first real career decision point: "Should I go to the officer advanced course and remain on active duty or get out after my initial service obligation?" I will explain when an officer should expect to attend the Combined Logistics Officer Advanced Course (CLOAC) at Fort Lee, VA, and when an officer is eligible to leave active duty.

When can I expect to attend CLOAC?

Officers should expect to attend CLOAC when they become promotable to captain, usually between an officer's third and fourth year of commissioned service. (For example: Officers selected for promotion to captain from the FY97 captains board will attend CLOAC sometime in FY98.) The Quartermaster Branch usually does not approve requests for CONUS stabilization or foreign service tour extensions once an officer is promotable to captain. The following are general guidelines in projecting attendance at CLOAC:

- OCONUS Officers: First CLOAC class immediately following their date eligible to return from overseas (DEROS).
- CONUS Officers: After 36 months time on station. Officers who are serving in a CONUS-sequential assignment following an OCONUS short tour may attend CLOAC after 24 months time on station.

CLOAC FY98: The Quartermaster Branch is now filling seats for CLOAC for FY98. There are approximately 20 officers in year groups 1993 and earlier who will attend CLOAC in FY98. The remaining seats will be filled by year group 1994 officers who were selected for promotion to captain during the FY97 captains board that was released in August 97. As a reminder, all officers now attend the Combined Arms and Services Staff School (CAS3) at Fort Leavenworth, KS, after CLOAC. The following is a list of CLOAC and CAS3 dates for FY98:

CLOAC Class	Start	End	CAS3 Class	Start	End
98-1	28 Oct 97	7 Apr 98	98-4	13 Apr 98	22 May 98
98-2	4 Jan 98	28 May 98	98-5	1 Jun 98	14 Jul 98
98-3	22 Feb 98	17 Jul 98	98-6	2 Aug 98	10 Sep 98
98-4	12 Apr 98	3 Sep 98	98-7	14 Sep 98	23 Oct 98
98-5	31 May 98	22 Oct 98	99-1	Dates Not	Available
98-6	19 Jul 98	16 Dec 98	99-2	Dates Not	Available
98-7	7 Sep 98	18 Feb 99	99-3	Dates Not	Available

Delaying CLOAC: Because CLOAC is considered a PCS move, there are several exceptions where officers may not be able to attend CLOAC in the FY in which they are promotable. The following are the primary reasons for which the Quartermaster Branch will delay an officer's attendance at CLOAC: (These reasons are the exception, rather than the rule, and are handled on a case-by-case basis.)

- DEROS: Officers must serve their entire overseas tours. In some cases, this may prevent an officer from attending CLOAC in the FY in which they are promotable.
- Less than 24 months at current duty station: For officers serving in CONUS locations, they must serve at least 24 months at their current duty station before attending CLOAC.
- Joint domicile: There are some instances where officers who are enrolled in the Married Army Couples Program may not be able to attend CLOAC in the FY in which they are promotable because of joint domicile issues. In such cases, the Quartermaster Branch coordinates with the spouse's branch manager to schedule a CLOAC date that will best accommodate a joint domicile assignment against Army requirements.
- Degree Completion Program (DCP): OCS officers who are approved to participate in the DCP before CLOAC will usually attend CLOAC later than the rest of their year group.
- Medical condition: Officers must meet Army weight standards in accordance with AR 600-9 and be able to pass the Army Physical Fitness Test. The Quartermaster Branch will delay attendance at CLOAC for officers with existing medical conditions until they are able to meet the standards.
- Company command: The Quartermaster Branch may delay an officer's attendance at CLOAC if the officer is currently serving in a branch-qualifying company command. In such a case, The Quartermaster Branch will ensure the officer and his chain of command understand that the officer will be considered branch-qualified as a captain following CLOAC and may not return to a troop assignment.

Can I Decline CLOAC and Get Out?

About 10 percent of promotable lieutenants consider leaving active duty rather than attend CLOAC. Before an officer is eligible to leave active duty, he must fulfill all service obligations. An active duty service obligation (ADSO) is just that: a set period of time for which an officer is obligated to serve on active duty. The following are several types of ADSOs that lieutenants may incur during their first three or four years of service before attending CLOAC.

Initial Appointment ADSOs: An officer's initial appointment ADSO depends on his source of commission:

- USMA: five years
- ROTC-Scholarship: four years
- ROTC-Nonscholarship: three years
- OCS: three years

All of the initial appointment ADSOs begin from the officer's entry to active duty (EAD) current tour date which is annotated in Section III – Service Data, on the ORB. PERSCOM does not waive initial appointment ADSOs except for limited cases, such as a hardship discharge.

Permanent Change of Station (PCS) ADSOs: Every time an officer executes a PCS at government expense, he incurs an ADSO. There are two types of PCS ADSOs: CONUS moves and OCONUS moves. PCS ADSOs are not added on to other ADSOs. Rather, they are served concurrently beginning from the day the officer signs into his new duty station.

- CONUS: one year

- OCONUS: full-tour length (one year for short tours, two years for "all others" tours and three years for long tours)

Military/Civilian Education ADSOs: Officers incur ADSOs by attending certain military schools or participating in civilian education programs. Education ADSOs are also served concurrently with other ADSOs beginning from the Through date on an officer's Academic Evaluation Report (AER).

- Officer Basic Course (OBC): None
- OAC: one year
- Combined Arms and Service Staff School (CAS3): None
- DCP: three days for every one day in class

Promotion and Career Status Change ADSOs: Officers do not incur an ADSO when promoted to either first lieutenant or captain. However, US Army Reserve officers serving on active duty incur a one-year ADSO when their career status changes from obligated volunteer (OBV) to voluntary indefinite (VI). As this career status change ADSO is the cause of great confusion in the field, I will explain it in more detail:

- OBV: USAR officers who come on active duty have an OBV date, annotated in Section III – Service Data, on the ORB. This date is based on the completion of their initial appointment ADSO. This career status means an officer is a volunteer (by executing the oath of office and accepting an appointment in the US Army Reserve) who is obligated (by being ordered to active duty) to serve on active duty for three or four years depending on the source of commission.
- Short Term Extension (STE): If an officer's OBV date is before the officer's consideration for promotion to captain, the officer is automatically granted a STE. This STE extends the officer on active duty for up to eight months after the convening date of the captains promotion board. This allows DA to publish the results of the board before the officer leaves active duty. Officers who do not wish to remain on active duty may decline the STE in writing, and thus be released from active duty on their original OBV date.
- VI: Once selected for promotion to captain, the career status of all US Army Reserve officers is changed to VI. Officers incur a one-year ADSO when they enter into VI status the day after they complete their initial appointment ADSO. Officers who wish to leave active duty must decline VI status in writing before completing their initial appointment.

Early Release for Lieutenants: PERSCOM recently announced an early release program for lieutenants called the Army National Guard Combat Reform Initiative. This program allows eligible officers to request an early release from their active duty commitment to serve the remainder of their military service obligation in the Army National Guard.

Training With Industry – Marriott Management Services

CW3 Thomas O. Mell

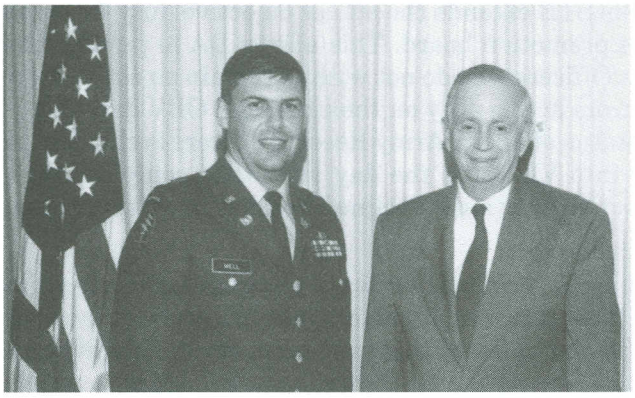
Editor's Note: The author was one of two Quartermaster warrant officers chosen in 1995 for the Training With Industry (TWI) program – the first time for warrant officers to participate in TWI since the early 1980s. With the Army's downsizing, and the combat service support regular line officer corps moving rapidly toward becoming multifunctional logisticians, the Warrant Officer Corps' responsibility will revolve around maintaining the technical integrity of the branches. Thus, The Quartermaster General directed more warrant officer participation in TWI: a one-year training program in civilian industry with a 36-month, follow-on assignment to a position requiring interaction with the private sector on a routine basis. The author is a food service technician with military occupational specialty (MOS) 922A, and the other Quartermaster warrant officer chosen in 1995 for TWI is a supply systems technician with MOS 920B who completed his assignment with Sears Roebuck and Co.

Marriott Management Services (MMS), the industry leader in contract food service, provides more than four million meals per day to students in kindergarten through grade 12, college and university campuses, hospital patients and staff, and corporate accounts nationwide. With 3,500 separate accounts employing over 100,000 associates (Marriott's term for employees) and $3 billion in sales per year, I quickly realized that Marriott's food service program is much larger than the US Army's.

In September 1996, I arrived at the Marriott International Corporate Headquarters, Washington, DC, as the US Army Quartermaster Training With Industry (TWI) Representative (and the only active duty military officer in a building of about 2,500 people). I was assigned for duty in the MMS Food and Beverage Department. The first few weeks were spent getting "Marriottized." That included learning to navigate around the corporate headquarters with the building's six floors of offices, cubicles and conference rooms and also meeting dozens of people, none of whom wore a name tag. By the end of last October, I felt fully immersed in the civilian food service industry. I had completed the Introduction to Marriott Management Course, recertified in the ServeSafe Food Service Sanitation Program, attended several computer software classes, and had office calls with all department heads, program managers and vice presidents. I also served on the Marriott Education Services (MES) Menu Innovations Task Force for one week when we rewrote the cycle menu for college and university accounts. One of the highlights of the TWI experience is attending the Marriott Managers Quality Contributor Course, one week of classic cooking at the Culinary Institute of America, Hyde Park, NY. For a person such as myself with more than 20 years in food service, going to the institute was a dream come true.

After 45 days on my tour, MMS restructured and eliminated the Food and Beverage Department at corporate level and reassigned me to the newly formed Product and Services Development Department, reporting to the "new" vice president for Product and Service Development. Witnessing a corporate restructuring was an education in itself. Many positions were eliminated, even more were downgraded and many long-term "career" associates had to seek employment outside Marriott.

The next couple of months focused primarily on training with Marriott Distribution Services (MDS), another company under the Marriott International umbrella. The primary MDS function is food distribution to all Marriott properties to include hotels, resorts and contract operations. MDS also supplies several major franchise brands such as Sbarro Pizza and Boston Market. I spent time with commodity purchasing agents, learning strategies for competitive buying of dairy, beef, poultry, oils and fresh produce, among others. I also worked in a Marriott Distribution Center learning about receiving point quality assurance (QA) and warehouse operations.



The author met with Marriott International's William Marriott during his tour of duty in the food service industry.

I traveled to Baltimore, MD, to conduct QA audits of several major food processors. I was trained on food testing procedures to determine pH viscosity and water content. During this period, I considered myself fortunate to travel with Marriott International's Chief Executive Officer (CEO) to tour the Kodak World Headquarters, Rochester, NY, which is an MMS Corporate Services Cook/Chill operation producing 32,000 meals per day. I also traveled to an egg pasteurization plant in Edison, NJ, which produces pasteurized, liquid egg products. I realized that the Army should convert to pasteurized eggs as the primary source for all recipes containing eggs. Pasteurization eliminates salmonella bacteria in food, thus creating a much safer and easier to use product. Marriott converted to this product 10 years ago as part of its Food Safety Program. In mid-December 1996, I traveled to Fort Lee to help with the US Army Culinary Team's awards banquet and ceremony.

My new year in 1997 started off working in the Marriott Hotel Test Kitchen, developing recipes and menus. I traveled with the Marriott Corporate Hotel Executive Chefs to a spice company's world headquarters in Baltimore, MD, to learn about taste-testing and product development. I helped prepare foods for several taste tests and spent time in the spice company's test kitchens working with some experimental flavored oils and prepackaged seasoning mixes. I also attended the Marriott Hotel Quarterly Food Safety Conference. Late in January 1997, I was selected to join the MMS, Education Services, Customer Driven Process (CDP) Team. The CDP team is responsible for management assistance to more than 500 college and university campuses with about $935 million in annual managed revenue.

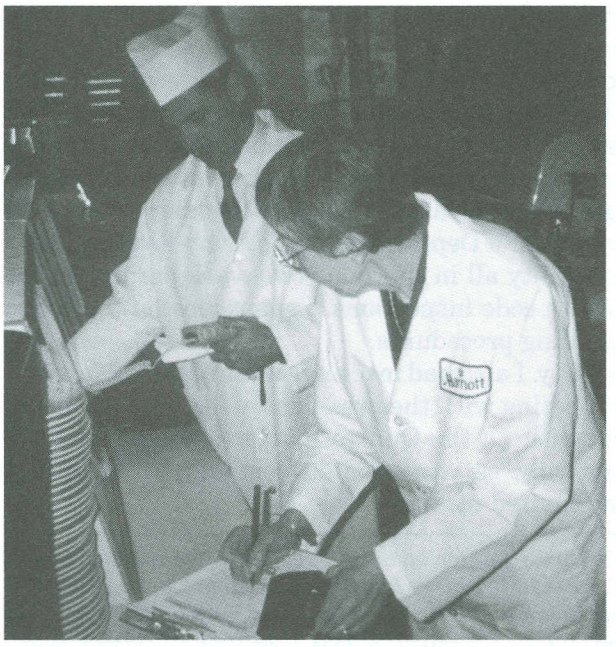
I spent one week at eight different campuses. Each campus posed a different set of management and operational challenges. I received the most valuable training of the TWI experience with the CDP team. I

realized that the college student is exactly the same as a soldier from a customer standpoint. College students and soldiers share almost all demographic characteristics, as well as both having meal cards.

As a team member, I trained in all phases of the CDP. At the University of Toledo, OH, I conducted client interviews to determine how Marriott can better support the needs of that college. I also conducted Food Safety and Kitchen Sanitation audits in the resident dining halls and the various retail franchise operations.

At the University of North Carolina, Charlotte, I conducted student interviews to find out how Marriott could improve dining services from a customer standpoint. On this trip, I gained the permanent duty as the Hazard Analysis Critical Control Point (HACCP) Program point of contact. The Marriott HACCP Program is recognized as the best in the business and one that I respect greatly. Marriott stands out as a "quality" company largely because of their "systems." HACCP, Food Safety, Recipe and Menu Development, Labor Optimization, and Food and Operational Cost Controls are systems to which Marriott devotes vast resources. The focus is to create and maintain systems that are effective and user friendly. The HACCP Program was developed to identify and monitor food safety hazard points (critical control points) as food travels from the farm, boat or ranch through processing, storage, preparation and ultimately to the customer. My next CDP team visit was Loyola College, Baltimore, MD, where I assisted in improving the retail food production process and resident dining hall kitchen organization.

Between CDPs, I attended the US Army Culinary Show at Fort Lee and invited the US Army Food Service Warrant Officer Basic and Advanced Courses from the US Army Quartermaster Center and School, Fort Lee, to tour Marriott headquarters. When the soldiers visited, we toured the headquarters building and MMS test kitchen and also received briefings from department heads of Menu Development, HACCP, and Marketing and Promotion Services. We then went to American University, Washington, DC, to tour and have lunch in the resident dining hall. American University is the model for Marriott college accounts. This particular account is almost entirely self-service. American University students make their own waffles, build their own pizzas, stir-fry their own meats and vegetables, make their own tacos and serve themselves to a seemingly endless variety of menu items. The self-service concept is one that I have encouraged in troop dining facilities for years. After working in American University, I now know how to raise troop feeding to new levels of quality.



The author and the director of Marriott's HACCP program take the temperatures of cold foods.

In early March 1997, I was sent to Oregon to conduct a survey of fresh milk-handling procedures at 11 separate MMS accounts. I was able to spend time in school services accounts for kindergarten through grade 12. It was fascinating to view second graders as customers and watch them go through the self-service stations choosing their own salads, main courses, desserts and beverages. I never thought I would be looking at "mom's" sack lunch as the competition and the only direction to grow the business.

In early April, I was again "on the road" at Northwestern University, Chicago, IL, conducting student dining services surveys. The Northwestern University general manager and executive chef are both masters at food preparation. I learned how to "dress-up" serving lines and dining rooms. Northwestern University is a very old school with very old dining halls. In fact, the dining halls were built with Army mess hall designs. I was amazed at all the variations and modifications possible with straight, stainless steel serving lines.

The following week I spent at a giant computer software company's world headquarters in Redland, WA. I was a group leader there and part of a very large management assistance team tasked with improving overall service and profitability. My duties included auditing 3 of the 11 facilities and developing ways to improve service. This was a fascinating week because this company's facilities and equipment are all new and "top of the line." The dining rooms are the most attractive and efficient I have ever seen. I was also placed on

a separate team tasked to improve organization in the central production facility (CPF). Within the CPF are the cold food department, hot food department, bakery, catering and storage areas. Menu components are prepared and then transported from the CPF to the satellite dining facilities. The CPF concept is very similar to any large-scale Army field feeding operation with "field breaks." The challenges are to get the hot food delivered hot and the cold food delivered cold, all on a strict time schedule. In April 1997, I also attend the US Army Worldwide Food Service Conference in Philadelphia, PA.

In May I travel to Oberlin College, Cleveland, OH. This campus has a fairly new main dining facility that was probably the oddest design I have ever seen. The facility had three main entrances, three exits, three dining rooms and three dishwashing operations – all supported by one serving line area. The facility was designed by a committee of college faculty, staff and students without the help of a food service facility design professional. The obvious management challenges were labor-related. It was costing too much to have a cashier at each entrance and to staff each dish room.

Hectic Schedule Continues

Later in May, I worked in the Marriott test kitchens learning about frozen bread products. I also took part in a comparative study between two food companies' frozen entrees. I also did a hamburger comparison. My task was to purchase hamburgers from seven quick-serve restaurants and compare the weight of the beef patties.

During May I also conducted a 21-Point Food Safety Audit in the corporate headquarters cafeteria. Marriott developed the 21-point audit to support the overall HACCP Program. Throughout my TWI assignment, I worked very closely with Marriott's Director of HACCP and Food Safety. I assisted in updating the program and checklists. I also worked on a fielding plan for the infrared food thermometer and the antimicrobial hand lotion that replaces gloves for food handlers in some instances.

In June 1997, I briefed Food Service Industry Trends and the Customer Driven Process to the director and staff of the Army Center of Excellence, Subsistence (ACES), US Army Quartermaster Center and School, Fort Lee. The second week in June, I was at Georgetown University as a member of Marriott's Corporate Services Menu Innovations Team. We developed a new cycle menu and filmed a catering food presentation training session. I spent the next two weeks at Georgia Technical Institute, Atlanta, GA, as a member of the new account opening team. Opening this account was like getting ready for a Department of the Army-level Connelly Awards evaluation, Thanksgiving and opening a new dining facility all in the same two-week period. Before Marriott took over, all the school's kitchens had failed the health code inspections. I spent most of those two weeks cleaning kitchens and training staff in proper food-handling procedures.

My TWI tour ended with a joyous and emotional farewell party. I also had meetings with William Marriott, Marriott International Chief Executive Officer, and another meeting with the president of Marriott Management Services. Both corporate leaders seemed very satisfied with all the Quartermaster officers who have been part of the TWI program over the years. As expected from a truly "service-oriented" company, both Marriott executives asked if there was anything else they could do and invited me back.

CW3 Thomas O. Mell is currently assigned as an instructor at the Army Center of Excellence, Subsistence, US Army Quartermaster Center and School, Fort Lee, Virginia. With over 22 years in the Army Food Service Program, he has held almost every position from cook to Food Service Technician, Support Command Staff. As an enlisted food service specialist, he has served with the Field Artillery, Combat Engineers, Infantry and Air Cavalry. As a hospital food service noncommissioned officer, he served as section noncommissioned officer in charge, dining facility manager, and general's aide. Food Service Technician tours include 7th Special Forces Group (Airborne), Fort Bragg, North Carolina; 19th Support Command, Korea; and 45th Corps Support Group (Forward), Schofield Barracks, Hawaii.

Noncommissioned Officer Branch Chief Notes

LTC C.S. Vakas, Chief, Quartermaster Enlisted Branch
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My first priority continues to be taking care of our fine Quartermaster soldiers and their families. Service to you is the most important thing that we do in the Quartermaster Enlisted Personnel Management Branch. Each and every Quartermaster soldier deserves the best. The 27 senior noncommissioned officers (NCOs) and Department of the Army civilians who work for me are committed to providing you first-class assignment and professional development support.

We are also charged with ensuring the proper worldwide distribution of Quartermaster soldiers, and this leads to some inevitable challenges as we balance soldier wants with Army needs. Your PERSCOM Quartermaster Enlisted Management Branch makes about 1,250 assignments every month. Your input is a vital part of the assignment process. Let us know what you want and we will always consider your preferences. Occasionally, our telephone lines can be very busy, but we will always make the time to discuss your assignment and your professional development needs.

Our PERSCOM Online newsletter is a good source of continuously updated information. We have recently established direct web linkages to and from the Quartermaster Home Page for your convenience. Also note that you are now able to send E-mail directly to the specific Assignment Managers and Professional Development NCOs who represent you by clicking on their underlined names once you enter PERSCOM Online. E-mail is a great alternative to the phone. You should receive an E-mail reply within 48 hours. Please make sure you include your complete name and social security number. Also provide your complete E-mail address in the body of your note and an office telephone number in case we need to call you.

We take our work very seriously and I want you all to understand our true measure of success is the daily contribution that we make to your career satisfaction. Always feel free to call me or send E-mail to me directly.

Recruiting for the US Army

Anthony G. Manigross Jr., Assignment Manager, Quartermaster Enlisted Branch, PERSCOM

Do you seek out the most challenging responsibilities? Do you enjoy making a difference? Do you have impact on your current organization? Do you love your profession?

If the answer is yes to all or any of these questions, then perhaps you are ready for the tremendous responsibility of being a US Army recruiter. You probably are asking yourself — *What is this guy's problem, doesn't he read the newspaper? Doesn't he know that recruiting duty is one step in the grave? Hasn't he heard about all the hours you have to work to be successful? Hasn't he heard about the pressure on performing your duties that exists while serving as a recruiter?*

I will tell you that I have read all of the negative press. I also tell you that, unless you do the tough and demanding jobs, you are likely to fall short when competing for promotion. The duties and responsibilities of an Army recruiter are enormous, but they can be done. This position will provide you with an opportunity on a daily basis to help mold the future of the Army. Quartermaster noncommissioned officers serving as detailed recruiters help bring the best of new soldiers into our Quartermaster ranks.

Many of the Army senior enlisted leadership have previously served in the recruiting assignments. There is a history of excellent promotion potential for detailed recruiters. The centralized promotion boards are briefed that recruiting duty is one of the tough jobs in the Army. You will go through one of the hardest screening processes currently used in the personnel management arena and will be trained by the highly professional staff at Fort Knox, KY.

The best place to start is with your career branch. Feel free to contact us by phone, mail or E-mail. (See the telephone and E-mail directory located in PERSCOM Online.) We will support you by doing an initial screening by AR 601-1 (Assignment of Enlisted Personnel to the US Army Recruiting Command). We will assist you in the application process, and we will follow you through your assignment as a recruiter.

Promotion of Quartermaster Noncommissioned Officers

Anthony G. Manigross Jr., Assignment Manager, Quartermaster Enlisted Branch, PERSCOM

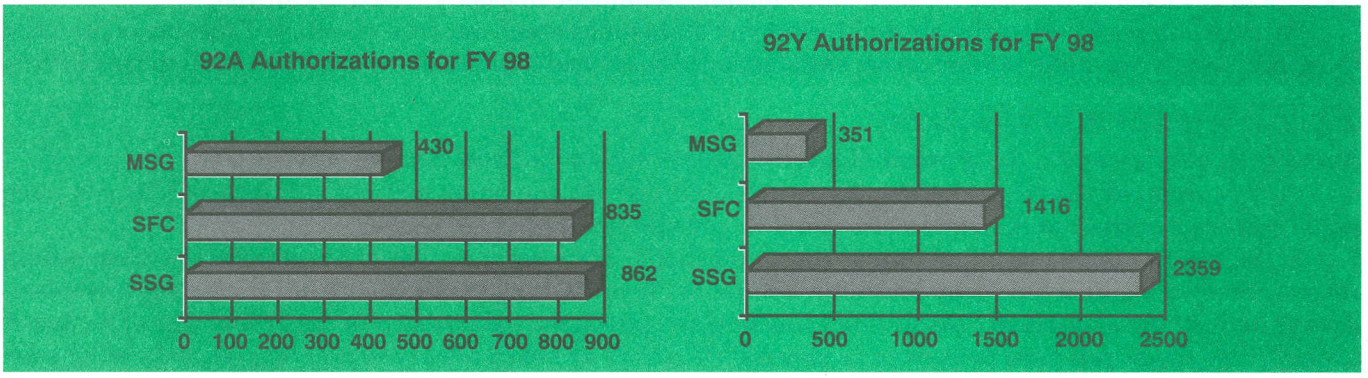
The release of the Calendar Year (CY) 97 Sergeant First Class promotion list generated interesting inquiries by both leadership and noncommissioned officers (NCOs). The most important thing to understand is that promotion is based on the needs of the Army for NCOs by rank and military occupational specialties (MOSs). The decision-making process for determining the number of soldiers selected is based on a detailed analytical review of a specific MOS.

Once this review is complete, several staff sections within PERSCOM evaluate the data so that a recommendation can be forwarded to the Deputy Chief of Staff for Personnel (DCSPER) of the Army on the number of recommended promotions in each MOS. The DCSPER makes the final decision on the selection target.

The best evaluation tool of the selection target for each MOS is "how many of the soldiers selected" in fact are promoted during the year that they were selected. Once Department of the Army releases the list of NCOs selected for promotion, the objective is to promote everyone on the list within the next 18 months. With the

release of the CY96 selection list to sergeant first class (SFC), PERSCOM has been able to exhaust the list within the designated timetable while simultaneously keeping the senior NCO positions filled. With continued precise management of the projected requirements to sergeant major (SGM), master sergeant (MSG), and SFC, the time that NCOs wait between being selected for promotion and actually pinning on the stripes should be minimal.

One of the most difficult realities of the promotion system is to understand why one MOS has a higher selection rate than another MOS even within the same career management field. The factor that most affects the select rate of promotion within the MOS is the relationship between the total number of authorizations in the promotion grade and the total number of authorizations within the current grade for the MOS. The chart below compares the authorizations at the MSG, SFC and staff sergeant (SSG) level for MOSs 92A (Automated Logistical Specialist) and 92Y (Unit Supply Specialist).



Comparing these two MOSs, there is a higher percentage of opportunity for advancement to SFC in MOS 92A. The total is 862 SSGs competing for one of the 835 positions at the SFC level. The competition for promotion to SFC in MOS 92Y is much more difficult. In 92Y, there are 2,359 SSGs trying to fill one of the 1,416 SFC positions, as the positions become vacant. Bottom line: the NCO pyramid at the top of 92Y shrinks much quicker than MOS 92A. Therefore, promotion opportunities are available for only the best of the best in MOS 92Y.

The average "pin on" time for Quartermaster soldiers over the last 12 months is shown on the following table. The "pin on" time represents time in service at the time the soldiers were promoted. The bottom line of the chart reflects the Army average for all MOSs.

Average Pin on Time for Promotion					
MOS	SGT	SSG	SFC	MSG	SGM
77F	4.38	9.86	14.19	17.12	22.33
77L	3.18	7.38	12.33		
77W	5.63	8.43	12.67		
43M	4.33	9.00			
57E	3.91	8.13	10.83	16.50	
92A	4.88	10.28	14.67	18.31	
92G	4.56	9.14	13.50	16.95	20.60
92M	4.34	8.83	12.13	16.50	
92R	4.61	8.64	13.60	17.11	
92Y	4.10	9.26	14.47	17.33	
92Z					21.70
Army	4.40	8.76	13.51	17.65	21.34

Source: DCSPER 411, June 1997

This chart (Average Pin on Time for Promotion) provides you an opportunity to compare your time in service with other NCOs in your MOS who have been promoted within the last year. Note that promotion opportunities tend to balance out through time as you progress through all ranks in your career field. The promotion of Quartermaster NCOs compares favorably to the Army average.

The one constant is that soldiers who are selected for promotion are always high-quality performers with unlimited potential. Your best bet for promotion is a well-documented file that confirms outstanding career performance. It is highly recommended that you review the promotion analysis for recent selection boards to gain an appreciation for the various criteria that the board members consider during the selection process Selection board analysis is available through PERSCOM Online at WWW.PERSCOM.ARMY.MIL.

Professional Military Education

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For soldiers currently on promotion lists, the next logical step in their careers should be professional military education. For senior noncommissioned officers (NCOs), this is the Quartermaster Advanced Noncommissioned Officer Course (ANCOC) and progression philosophy of "**Select, Train and Promote**." These three critical steps in a NCO's career can influence the remainder of his time in military service.

Following this philosophy is more important for soldiers to posture themselves for promotions to the next rank. The next step, for soldiers selected for promotion to staff sergeant or sergeant first class and the focus of this article, is to contact your assignment manager to schedule a school date at Fort Lee's NCO Academy. This should be a date that you and your command can live with. This is extremely important because NCOs selected for promotion need to attend a professional development school, and the Army budget demands that school seats are closely monitored to ensure maximum class fill. Sometimes, attendance at these schools is difficult for soldiers because of high unit operating tempo, but it is a commitment that commands must make for their soldiers' professional development and longevity of the Quartermaster NCO Corps.

At times, soldiers schedule class attendance dates and then cancel at the last minute. This causes two difficult situations for your assignment manager. First, last-minute cancellations place a strain on the assignment manager who has to refill a seat, usually on short notice and many times with no success. Second, it makes it difficult to reschedule an individual within the same year because seats are not as plentiful as in previous years. This is critical, as attendance within one year of promotion is mandatory for soldiers to retain the rank to which they have been promoted.

Once a soldier is selected for promotion he is guaranteed a seat for training. With current class schedules, it should be possible for every soldier selected for promotion to be scheduled for class within the year of selection. The Quartermaster Enlisted Personnel Management Branch at PERSCOM is carefully monitoring total class seat availability with the population expected to be promoted. In other words, we are scheduling, because of budget limitations, one seat for each promotee per class year.

Does this mean you must go to class in the same year as promotion? While it is highly desirable, some limitations such as deployments and rotations will prevent soldiers from going to Noncommissioned Officer Education System schools in the first year of promotion. However, you will be considered a conditional promotion. This means you are a promoted soldier but you have not been to a professional development school. There are currently NCOs in the force, Armywide, who have been promoted and have not been to ANCOC or BNCOC, respectively, for four years. The limitations for conditional promotions are not currently well outlined but are promotions that could be subject to revocation if the limitations are better defined as expected in the near future. The Quartermaster Branch does keep track of NCOs promoted and not trained, and continues to schedule all NCOs eligible to attend the NCO Academy. Bottom line: Once lists are released, soldiers should contact their assignment manager to determine the best time to attend school.

If you are a Quartermaster NCO who needs training and has not heard from PERSCOM, immediately inform your Quartermaster Branch assignment manager and get a seat reserved for your professional development. Your promotion is an extremely important testament to your abilities as a professional NCO in the Quartermaster Corps, and it also represents your potential to continue to move up the NCO chain. However, continued career advancement requires timely, successful completion of your professional military education.

ASL Mobility

Authorized Stockage List (ASL) mobility is a Quartermaster-Directorate of Combat Developments initiative to develop *standard* platforms for tactical movement of Class IX (repair parts) ASLs. The envisioned solutions are mobile Class IX facilities with cabinets:

- Heavy divisions/Armored Cavalry Regiments/separate brigades would use expandable and nonexpandable International Standards Organization (ISO) containers transported with heavy extended mobility tactical truck (HEMTT) load-handling systems (HEMTT-LHS).
- Light, airborne and air assault divisions would use the Internal Airlift/Helicopter Slingable Container Units (ISUs) transportable on trucks and aircraft.

The desired Concept Experimentation Program (CEP) evaluation site is Fort Carson, CO. The CEP is scheduled for 2d Quarter, FY98. For more information, contact MAJ Steven L. Wade at DSN 687-3184 and E-mail: wades@lee-dns1.army.mil.

Modular Fuel Storage

Modular fuel storage is an Advanced Concepts and Technology II initiative funded by the US Army Training and Doctrine Command (TRADOC) to improve fuel storage operations in the heavy divisions' area of operations. Modular fuel storage focuses on efficiencies gained from rapid delivery of an entire bulk fuel load without transferring fuel from vehicle to collapsible fuel tank. Currently, it requires 33 minutes to completely transfer all fuel from an Army fuel tanker into the collapsible tanks. The concept provides for the storage of Class III Bulk (petroleum, oils and lubricants) using fuel modules to replace the 10,000-gallon collapsible storage tanks in the divisional fuel system supply point (FSSP). The fuel modules' capacity should be greater than or equal to 3,000 gallons. The fuel modules' configuration will conform to the Army's existing load-handling system that consists of a truck and trailer, each capable of transporting a 16.5-ton load.

The concept envisions load-handling system trucks pulling a trailer, and each carrying a fuel module. The modules should have multifunctional capabilities of composite materials that will simultaneously incorporate structural, ballistic and signature reduction. Improved ceramic thermal barrier coatings, as well as wear-resistant coatings with tailored combinations of mechanical and physical properties for reducing weight, should also be examined. These technologies will be explored for the hose/fittings/couplings used with the modules when connecting them as a fuel farm. A contract award will take place no later than January 1998, with completion no later than 31 Dec 98. For more information, contact MAJ Steven L. Wade at DSN 687-3184 and E-mail: wades@lee-dns1.army.mil.

Fuel Support Integrated Concept Team

The US Army Quartermaster Center and School (USAQMC&S) is complying with the Army Chief of Staff's guidance to the TRADOC commander on streamlining the fuel requirements determination process for Force XXI. The lack of this functional concept and implementing doctrine diminishes Quartermaster ability to provide focus on fuel operations in Force XXI and the Army After Next.

A multidisciplinary Integrated Concept Team (ICT) will be chaired by a lieutenant colonel, 92F (Petroleum and Water Officer), to define future requirements and related actions for fuel support. The ICT will convene no later than February 1998 and operate until 31 Dec 98. For more information, contact MAJ Steven L. Wade at DSN 687-3184 and E-mail: wades@www.lee.army.mil.

TASS Battalion Commanders' Conference

The USAQMC&S hosted its 2d Total Army School System (TASS) Quartermaster Battalion Commanders' Conference, 7-8 Nov 97 at Fort Lee, VA.

TASS represents the future of Army training, incorporating the Army Distance Learning Program to provide standardized military occupational specialty reclassification and other training at regional locations throughout the country. The regional schools, built around the nucleus of the former USAR schools, will use the latest Distance Learning technology to deliver training to both Active and Reserve Components based on newly designed, standardized Total Army Training System Courseware (TATSC).

About 40 participants took part in the TASS conference, including five general officers/promotable colonel training division commanders or assistant division commanders. Other participants included each of the

seven regional Quartermaster battalion commanders, representatives from various divisions (institutional training), combat service support brigades, the US Army Reserve (USAR) Command, staff members of the USAQMC&S, US Army Combined Arms Support Command, TASS Regional Coordinating Elements and the TASS TRADOC Coordinating Element.

BG Celia L.F. Adolphi, the USAQMC&S Deputy Commanding General for Mobilization and Training (Individual Mobilization Augmentee), hosted the conference. MG James M. Wright, the Quartermaster General, participated via Telenetwork (TNET) broadcast from Fort Hood, TX.

ACES Distance Learning

The Department of Training, Army Center of Excellence, Subsistence (ACES) has implemented the latest in multimedia technology for training the force. Despite dwindling Army resources, ACES can provide state-of-the-art training for soldiers worldwide. Telenetwork (TNET) broadcasting allows the use of several types of audiovisual communication. Specialized equipment allows the instructor to control the on-screen projection. Viewers have the opportunity to see and interact with the instructor, participants at other sites, and computer-based images.

The first ACES broadcast aired May 1997 on performance nutrition. Fifty-seven students at Fort Hood, TX; Fort Stewart, GA; Schofield Barracks, HI; Fort Drum, NY; and Fort Carson, CO, tuned in. Last October, ACES aired a Field Sanitation Course that included the newest equipment. Forty-nine students at Fort Hood; Fort Eustis, VA; Macedonia; Vilscek, Germany; and Fort Bliss, TX, participated. Training was well received by all units, with follow-on requests for more TNET classes. In FY98, ACES plans to broadcast the following classes: Army Food Management Information System (AFMIS) troubleshooting, Modern Burner Unit (MBU) and Performance Nutrition. For dates and points of contact, check the ACES Home Page at http://www.lee.army.mil/quartermaster/aces.html.

Petroleum Soldier's Manual

The 77L (Petroleum Laboratory Specialist) soldier's manual, STP 10-77L-SM-TG, is being updated to include all laboratory testing procedures for a laboratory specialist assigned to a Modular Base, Mobile or Airmobile Petroleum Laboratory. The draft manual was distributed to the field for comments on 9 Sep 97. The new tasks will be incorporated in the Total Army Training System Courseware (TATSC) development.

Sling Load Rigging Manuals

The USAQMC&S took over the proponency for developing sling load rigging manuals 2 1/2 years ago. Since then, a major project has been revision of all three of the sling load manuals. Here is the status of this project:

- FM 10-450-3 (Multiservice Helicopter Sling Load: Basic Operations and Equipment), published 10 April 1997.
- FM 10-450-4 (Multiservice Helicopter Sling Load: Single-Point Rigging Procedures), projected completion date December 1997.
- FM 10-450-5 (Multiservice Helicopter Sling Load: Dual-Point Rigging Procedures), in development phase with a projected completion date of July 1998.

The revision of these manuals includes the renumbering of field manuals to reflect the Quartermaster identifier (10). A list of items that has been recently certified for sling load, but not incorporated into one of the publications, can be found on the Aerial Delivery and Field Services Department's Home Page at http://www.lee.army.mil/quartermaster/adfsd.html.

Mortuary Affairs Reunion

The Mortuary Affairs Center (MAC), USAQMC&S, Fort Lee, VA, hosted its first Bi-Annual Graves Registration (GRREG)/Mortuary Affairs (MA) reunion, 19-20 Sep 97, at Fort Lee, VA. Approximately 135 GRREG/MA alumni from the World War II, Korea, Vietnam, and *Operation Desert Storm* eras gathered to renew old acquaintances and learn what MA is like today.

The group decided to hold this every two years, even though most wanted an annual event. It was helpful to review the doctrine of past eras, find out what worked and what did not, how predecessors overcame some of the problems that still plague the Army today, and share experiences. Hopefully, the word will spread and the MAC will have 250 participants for the 1999 event. The MAC is compiling a database of names and addresses of past GRREG and MA affairs personnel. Please E-mail information to thomassc@lee-dns1.army.mil.

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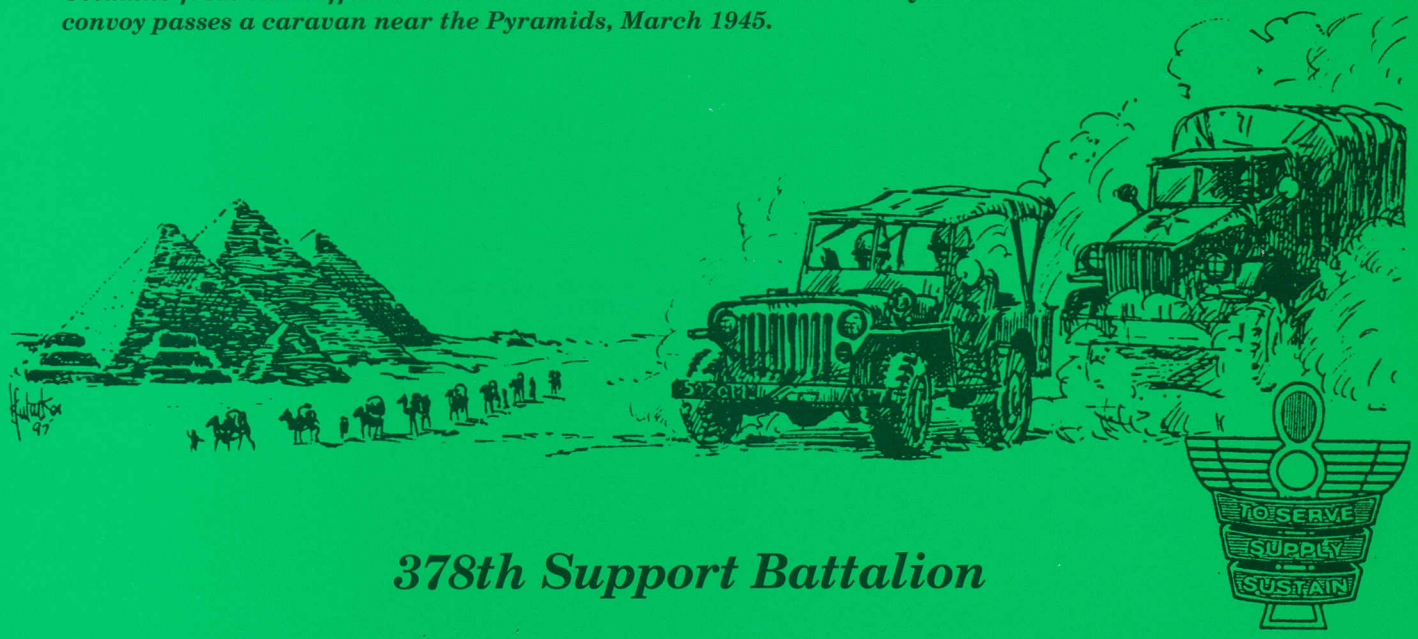
Quartermaster Home Page *Quartermasters now have their own Home Page on the World Wide Web computer Internet. You can access the Home Page by typing: http://www.army.mil/quartermaster.*

Columns from two different eras encounter each other as a 592d Quartermaster Service Battalion convoy passes a caravan near the Pyramids, March 1945.



378th Support Battalion

Constituted 13 January 1945 in the Army of the United States as Headquarters and Headquarters Detachment, 592d Quartermaster Battalion

Activated 10 February 1945 in Egypt

Redesignated 28 March 1945 as Headquarters and Headquarters Detachment, 592d Quartermaster Service Battalion

Inactivated 10 October 1945 in Egypt

Redesignated 23 May 1947 as Headquarters and Headquarters Detachment, 378th Quartermaster Battalion, and allotted to the Organized Reserves (Organized Reserves redesignated 25 March 1948 as the Organized Reserve Corps; redesignated 9 July 1952 as the Army Reserve)

Activated 25 June 1947 at Portland, Oregon

Inactivated 31 August 1950 at Portland, Oregon

Activated 28 March 1963 with Headquarters at Annville, Pennsylvania (organic units constituted 5 November 1962)

Battalion broken up 31 January 1968 and its elements reorganized and redesignated as follows:

Headquarters and Headquarters Detachment as Headquarters and Headquarters Company, 378th Supply and Service Battalion

Companies A, C, D, and E as the 1003d, 1004th, 1006th, and 1005th Supply Companies, respectively (hereafter separate lineages)

Company B as the 1007th Maintenance Company (hereafter separate lineage)

Reorganized and redesignated 16 April 1994 as Headquarters and Headquarters Detachment, 378th Support Battalion

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