Quartermaster

PROFESSIONAL BULLETIN

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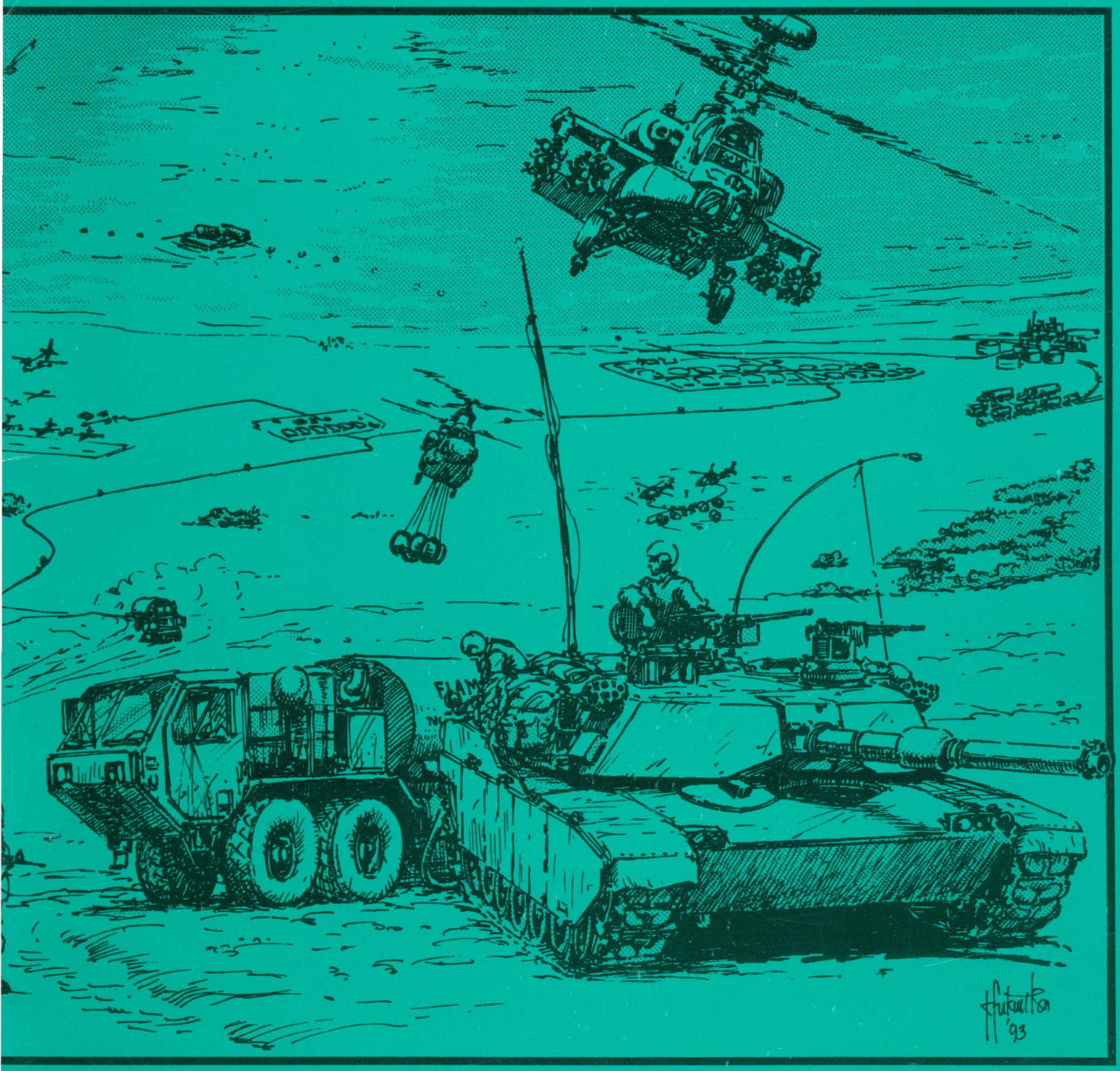
LOGISTICS WARRIORS



Fueling the Force

Headquarters, Department of the Army

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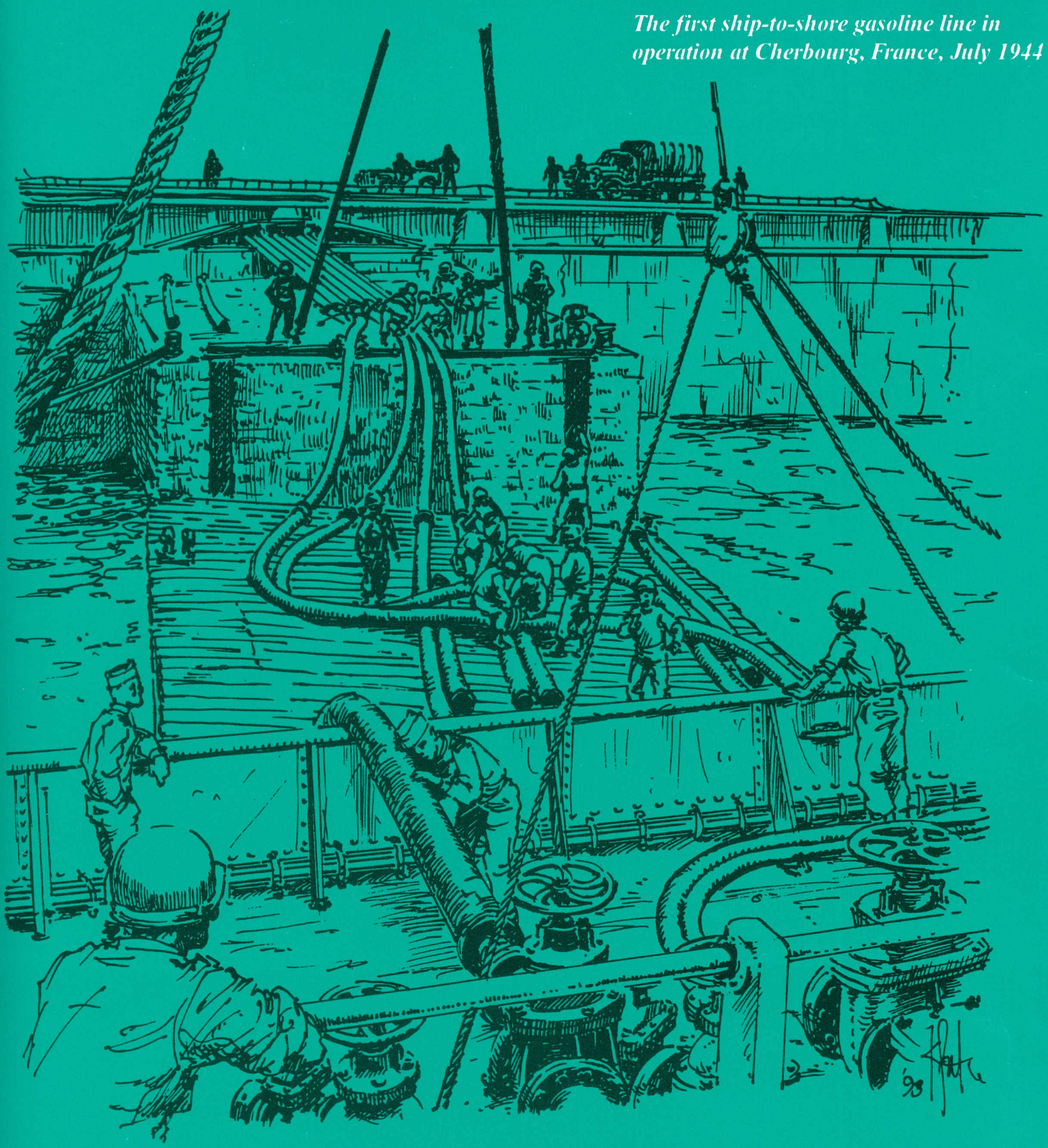

The first ship-to-shore gasoline line in operation at Cherbourg, France, July 1944

Winter Theme: Petroleum Today - A New Group

Quartermaster
PROFESSIONAL BULLETIN

The Quartermaster General
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COVER AND ILLUSTRATIONS: LTC Keith K. Fukumitsu, Quartermaster, created all the cover art for this edition, as well as the line drawings accompanying the articles. The wraparound front and back covers depict the Inland Petroleum Distribution System (IPDS), the Army's primary method of receiving, storing and distributing bulk fuel to support military forces deployed worldwide in contingency operations. LTC Fukumitsu was formerly assigned as Chief of the Course Development Division, Directorate of Training and Doctrine, U.S. Army Quartermaster Center and School, Fort Lee, Virginia.

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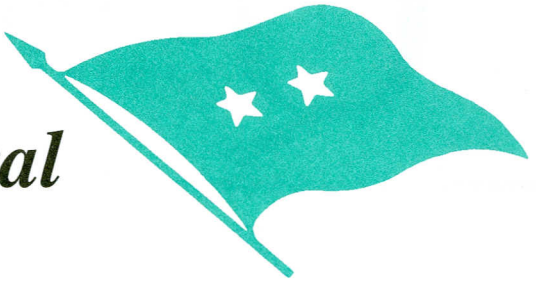
From The Quartermaster General



Major General Robert K. Guest

Petroleum Today - A New Group

During combat, several commodities play a significant role in determining whether a force experiences victory or defeat in battle. One of the most critical commodities is bulk petroleum (Class III). The Army's multifunctional leaders are responsible for ensuring that their units receive the petroleum, oil, and lubricant (POL) support required to sustain themselves in combat. These logisticians must accomplish this task by fully understanding POL structure, operations and management.

This edition of the *Quartermaster Professional Bulletin* will focus on the support Logistics Warriors must give to successfully fuel the force. Topics include **The 49th Quartermaster Group**, the only active duty petroleum group which supports two Army theaters; **The Inland Petroleum Distribution System**; **Fuelmasters on the Move** and **Fuel Quality Surveillance.** These articles show how leaders and soldiers are fueling the Army.

Quartermaster Hall Of Fame

The Quartermaster Hall of Fame inducted five new members in 1993 for significant contributions to the Corps. Focus your attention on the article which highlights each new member's biography and exceptional accomplishments as Quartermasters. These soldiers should be revered throughout the Corps for their outstanding logistics achievements.

NEW Career News Section

It is very important that all Quartermaster soldiers have a means to receive current news that directly affects their career development. To accomplish this task, the *Quartermaster Professional Bulletin* has included a Career News section designed to inform soldiers of branch issues such as promotion boards, professional schools, and assignment information. This section is launched with the article titled **The Last Quartermaster Officer Advanced Course** which explains the past, present and future of the Quartermaster Officer Advanced Course. Also included in this edition is U.S. Army Total Personnel Command news targeting officers, warrant officers and enlisted soldiers. I am confident that this new addition to your professional bulletin will assist you in managing your career.

Major General Robert K. Guest, 43d U.S. Army Quartermaster General, has held a wide variety of command and key staff positions. His previous assignments include Deputy Chief of Staff, Logistics, U.S. Army Europe and Seventh Army; Commander, 3d Corps Support Command, Wiesbaden, Germany; Director of Logistics Management, U.S. Army War College, Carlisle Barracks; Commander, Division Support Command, 101st Airborne Division (Air Assault); Chief, Supply and Maintenance Policy Division, Office of the Deputy Chief of Staff for Logistics; Commander, 1st Supply and Transportation Battalion, 1st Infantry Division.

Rank Structure and Promotions

Command Sergeant Major Milton B. Hazzard

Looking back through Army history, one can find footprints that lead to Logistics Warriors who stand in today's formations. For example, let us briefly examine the evolution of noncommissioned officer (NCO) rank insignias. Significant events that occurred not so long ago include changing the rank insignia for E7, from master sergeant to sergeant first class. The insignia representing E6 was changed from sergeant first class to staff sergeant. (In the "Brown Shoe Army," staff sergeant was abbreviated as S/SGT.) The insignia representing E5 was changed from staff sergeant (SSG) to sergeant. During this part of the change, the rank of sergeant was recalled to active duty. A "Grandfather Clause" allowed the wearing of old insignias until promotion, reduction, or the end of 1968.

Morale Impact

However, this clause was not very successful in its mission of reducing the negative impact on morale. I can vividly remember the mental pain and perception of lost dignity expressed by the soldiers who were affected. Two new pay grades and the rank of sergeant major (SGM) were authorized at the same time as the other changes. The current insignias for command sergeant major and sergeant major of the army were authorized in 1968 and 1979, respectively.

Footprints from the past also lead to a system called temporary promotions. It seems the more things change, the more things remain the same. Effective 1 Oct 93, the Army announced a system called "conditional promotions." These conditional promotions depend on the successful completion of the required level of the Noncommissioned Officer Evaluation System (NCOES). Soldiers who fail to complete the Advanced NCO Course (ANCOC) or U.S. Army Sergeants Major Course (USASMC) before 1 Oct 93 due to academic or disciplinary reasons, or who were denied enrollment (for reasons such as overweight) will not be promoted. A SSG released from or denied enrollment to ANCOC may apply for reinstatement to ANCOC. If reinstated, the SSG will be promoted upon successful completion with an effective date and date of rank as of the date of graduation.

Those soldiers who on or after 1 Oct 93 accept a "conditional promotion" and are later denied enrollment, declared a "no show," become academic failures or otherwise do not meet graduation requirements will have their promotions revoked by the U.S. Army Total Personnel Command (PERSCOM) promotions branch (TAPC-MSP-E) and will be administratively removed from the centralized promotion list. *De Facto* (actual) status will be granted. They will retain the pay from the effective date of promotions to the date the soldiers were disenrolled, denied enrollment, or failed to show on the report date for class. Date of rank will be that of the grade previously held. Soldiers who must end their courses early for bonafide medical or compassionate reasons will not have their promotions revoked. However, those promotions remain conditional until completion of the required course.

Soldiers who on or after 1 Oct 93 are denied enrollment, declared "no shows," become academic failures or otherwise do not meet the graduation requirements before reaching their sequence numbers will not be promoted. Their names will be administratively removed from the centralized promotion list. Provided otherwise eligible, SSGs removed from the list will be considered by the next regularly scheduled board.

Reinstatement

Soldiers will not be reinstated to the USASMC unless course termination was due to bonafide medical or compassionate reasons. The General Court Martial Convening Authority (GCMCA) of the U.S. Army Sergeants Major Academy (USASMA) will approve all removals/dismissals from the USASMC. Those SGMs who have their "conditional promotions" revoked will be administratively removed from the centralized promotion list and will not be eligible for consideration by subsequent promotion boards.

Logistics Warriors have historically met and exceeded all new standards. This new standard simply provided new mental and physical nourishment. Lean forward and keep up the fire.

CSM Milton B. Hazzard is the Command Sergeant Major of the Quartermaster Regiment and of the U.S. Army Quartermaster Center and School, Fort Lee, Virginia.

DEPARTMENT OF THE ARMY

Lineage

HEADQUARTERS AND HEADQUARTERS COMPANY 49th QUARTERMASTER GROUP

Constituted 1 May 1936 in the Regular Army as the 49th Quartermaster Regiment

Redesignated 1 April 1942 as the 49th Quartermaster Truck Regiment and activated at Berkeley, California

Headquarters and Headquarters Detachment, 49th Quartermaster Truck Regiment, reorganized and redesignated 14 December 1943 as Headquarters and Headquarters Detachment, 49th Quartermaster Group (remainder of regiment - hereafter separate lineages)

Group inactivated 15 November 1947 in Italy

Redesignated 1 June 1993 as Headquarters and Headquarters Company, 49th Quartermaster Group, and activated at Fort Lee, Virginia

FUELING THE FORCE

The 49th Quartermaster Group

CPT David B. Bailey

The 49th Quartermaster Group (Petroleum) was redesignated and reactivated at Fort Lee, VA, in June 1993 as part of the "lessons learned" during *Operation Desert Shield/Storm.* The Army reacted to the absolute necessity of an immediately available petroleum command and control element to deploy to a theater of operations.

The 49th Quartermaster Group now provides the capability for the Army to coordinate the inland distribution of fuel to all U.S. forces from the appropriate joint petroleum offices, host nations, and defense fuel regions. The 49th is the only petroleum group currently on active duty. The 49th exercises command and control over active duty Army, U.S. Army Reserve and Army National Guard units upon activation, during deployments or full mobilization as part of the Total Army concept. Rapidly deployable, the 49th provides logistics command and control of petroleum and water units arriving at a theater and initiating operations. The Army identified this early establishment of a command and control network as one of the most crucial steps in successful bulk Class III (petroleum, oils and lubricants) and water operations.

The 49th Quartermaster Group has had a long and distinguished history. It was constituted 1 May 36 in the Regular Army as the 49th Quartermaster Regiment. This unit was then redesignated during World War II as the 49th Quartermaster Truck Regiment at Berkeley, CA. The Headquarters and Headquarters Detachment of the 49th Quartermaster Truck Regiment was reorganized and redesignated on 14 Dec 43 as Headquarters and Headquarters Detachment, 49th Quartermaster Group. Following the end of hostilities in Europe, the group inactivated on 15 Nov 47 in Italy. The group participated in the campaigns of Naples-Foggia, Rome-Arno, North Apennines and the Po Valley.

Currently, the 49th Quartermaster Group exercises command and control over U.S. Forces Command (FORSCOM) units based at Fort Lee, VA. The group consists of 1 active battalion, 11 Reserve Component battalions, and 1 separate company. Many of the subordinate battalions deployed to *Operation Desert Shield/Storm, Operation Provide Comfort*, and the humanitarian effort in Somalia, Africa. Units of the 49th Quartermaster Group have also been involved in recent peacetime contingency operations. These operations range from Hurricane Andrew relief in Florida and flood disaster relief in Iowa to more recent short-term deployments to Panama. Including the Headquarters and Headquarters Company, the 49th Quartermaster Group consists of the 555th Military Police Company and the 240th Quartermaster Battalion during peacetime operations.

Future: Dual Mission

The 49th Quartermaster Group has the dual mission of petroleum and water management in the theater of operations (TOPNS). The group plans and manages petroleum and water distribution for the theater. The group provides liaison to host nation staffs for coordination of petroleum and water logistics support, as well as command of inter-zonal pipelines. The group also has the mission of water production, storage and distribution.

Since reactivation, the group has been heavily involved in real-world mission scenarios. Recently, representatives from the 49th Quartermaster Group's Petroleum Operations Section traveled to Korea and Okinawa to assist in war-planning during Ulchi Focus Lens. Ulchi Focus Lens was a computer-generated command post exercise that heavily simulated the petroleum requirements and distribution needs for a conflict. Group representatives helped to refine and analyze the Inland Distribution Plan for Petroleum products for Air Force, Army and Marine Corps units.

Previously, the 49th Quartermaster Group participated in the Force Projection Logistics Exercise (FPLEX) at Fort Pickett, VA. The unit will participate in Bright Star 94 and Roving Sands 94. During these exercises, the group's ability to command and control petroleum and water supply in the TOPNS will be exercised and tested. The 49th Quartermaster Group also remains committed to the humanitarian aid mission in Somalia and future peacetime contingency operations. These missions and others will continue to challenge both the 49th Quartermaster Group staff and subordinate units that will be "Fueling the Force" well into the future.

CPT David B. Bailey is currently Adjutant for the 49th Quartermaster Group (Petroleum) at Fort Lee, Virginia. His previous assignments include S4 of the 240th Quartermaster Battalion; Officer Proponency Analyst for the Office of the Quartermaster General; Class Accountable Officer, 565th Ordnance Company, Crailsheim, Germany; Executive/Supply Operations Officer, 75th Combat Supply Company (General Support), Schwaebisch Hall, Germany; Supply/Services Officer, 7th Corps Support Group, Crailsheim, Germany; and Platoon Leader and Accountable Officer, 75th General Supply Company, Schwaebisch Hall, Germany. He is a Distinguished Military Graduate of the University of Louisville Reserve Officers' Training Corps where he received a degree in chemistry.

Quartermaster Aerial Delivery of Supplies to Forward-Deployed Soldiers

Exercise...Exercise...Exercise

Before the 49th Quartermaster Group (Petroleum) was even activated, the group had been tagged to participate in exercises around the world. With the 49th the only active duty petroleum group in the Army, the demand for its time, knowledge and expertise seems to be never-ending.

Since reactivation in June 1993, the group has deployed soldiers overseas for exercises such as Ulchi Focus Lens and Bright Star. While stateside, the group has participated in Roving Sands and the Force Projection Logistics Exercise (FPLEX).

These exercises help the group better know areas of the world to which they one day may deploy. Exercises also allow the group to work with many of their affiliated Reserve Component units. Should a real-world situation arise, the time spent in these exercises is invaluable.

The group looks forward to its many missions. It needs to be ready to deploy to any place in the world at a drop of a hat. The 49th must visit, coordinate and help mentor 12 affiliated battalions, of which 11 are U.S. Army Reserve and Army National Guard. The 49th Petroleum Group stands ready to fuel the force.

The Inland Petroleum Distribution System

LTC Patrick M. Holder

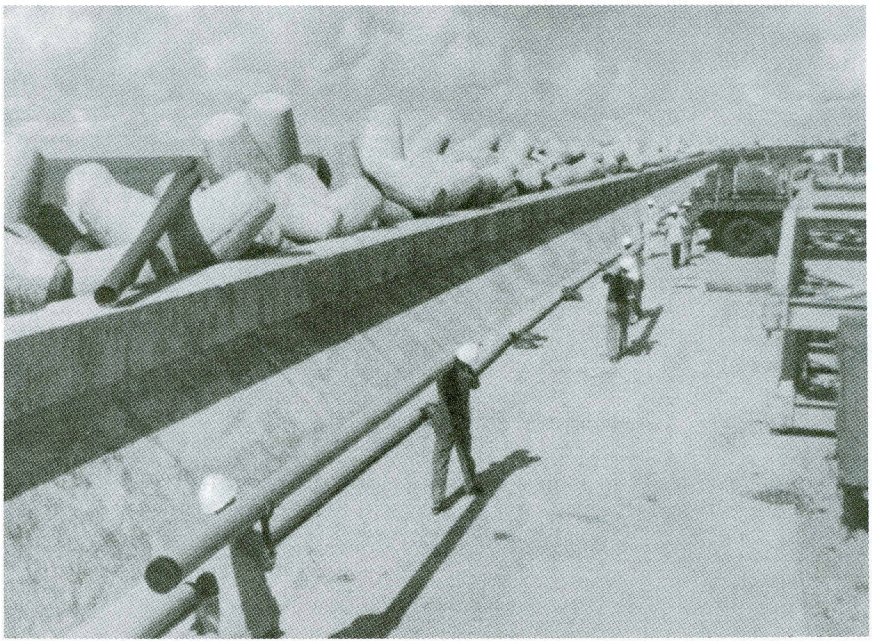
The author describes one of the Army's most important Operational Project Stocks (OPS) and how it has become the Army's primary method of receiving, storing and distributing bulk fuel to support military forces deployed in worldwide contingency operations. (The line drawing by LTC Keith K. Fukumitsu on the front and back covers of this edition of the Quartermaster Professional Bulletin depicts the Inland Petroleum Distribution System.)

Since World War II, distribution has been perhaps the most challenging obstacle for the military logistician who provides petroleum fuels to operating forces whenever and wherever required. The U.S. Army currently has a tactical petroleum system, proven in battle, which can receive, store and deliver large quantities of bulk fuels to dispersed and committed ground and air forces.

In June 1977, the U.S. Army Quartermaster School at Fort Lee, VA, published a study titled "Bulk Petroleum Fuel Distribution in the Theater of Operations." The study examined the requirements of the bulk fuel distribution systems during war. The following are significant conclusions from this study:

- Pipelines are the most efficient means of transporting large quantities of bulk fuels required in modern warfare.
- Pipelines should be extended as far forward into the combat zone as practical. Early logistics planning should include pipeline requirements and provisions for assigning pipeline construction and pipeline operating units as the theater develops.
- A documented need exists for the development of an assault pipeline system and an over-the-beach capability to resupply fuel to deployed forces from ocean tankers.

Department of Defense directives specified U.S. Army responsibility for the distribution of bulk fuel to the U.S. and allied forces in the theater of operations. As a result, U.S. Army efforts focused on a capability to support Southwest Asia, the area most likely at that time where U.S. forces would be committed.



Workers carry pipe along the seawall in the port of Mogadishu, Somalia.

Improvement

In 1983 the Army staff established the Action Officers Workshop to Improve Petroleum Capabilities to develop an operation using nondevelopmental, commercially available components as much as possible. This effort resulted in procuring a 30-mile petroleum storage and distribution system in 1986 and testing it at Yakima Test Center, WA. Based on this test and another in 1987, the Southwest Asia Petroleum Distribution Operational Project (SWAPDOP) was developed to support U.S. Central Command (CENTCOM) operational plans. SWAPDOP consists of two systems: the Offshore Petroleum Discharge System (OPDS) and the Inland Petroleum Distribution System (IPDS). The U.S. Navy assumed responsibility for OPDS development and the Army concentrated on the IPDS. Eventually, the changing world situation modified the focus of potential military operations from Southwest Asia to anywhere in the world. The resulting system is deployable to worldwide contingency operations.

The IPDS consists of both commercial and military petroleum equipment to support an operational force with bulk fuels. The following are the three primary IPDS subsystems:

- Tactical Petroleum Terminal (TPT)

- Pipeline components
- Pump stations

The TPT is a 3.6-million gallon storage facility capable of receiving, storing and issuing up to three types of petroleum fuels. Fuels can be received and issued by pipeline and tanker truck. The TPT's major components are 18 210,000-gallon collapsible fabric tanks along with 15 600-gallons per minute (GPM) hose line fuel pumps. Additionally, the TPT has approximately 30,000 feet of 6-inch petroleum hose in various lengths for receipt, transfer and issue operations. Also included are 1 contaminated fuel module with 2 50,000-gallon tanks for receipt and segregation of product interfaces, 15 350-GPM filter/separators, 4 positive displacement meter/strainer assemblies, 6 floodlight sets and associated valves, fittings and hardware required for complete installation.

Recent engineering changes to the TPT configuration added the capability to issue and employ the TPT in smaller increments called Fuel Units. Each TPT consists of three Fuel Units, each with approximately one-third the equipment and capability of a TPT. A Fuel Unit handles only one fuel. It does not contain a pipeline connection, which is issued separately. This design change offers commanders greater flexibility employing bulk fuel assets, optimizes transportation assets when a less-than-complete TPT is required and tailors the equipment resources to the bulk fuel requirements.

The pipeline is made up of 19-foot sections of 6-inch diameter aluminum pipe with machined single-grooved ends. The pipe is joined with a snap-joint coupling that contains an integral gasket and is installed with a removable assembly tool. Pipeline is configured in five-mile sets. Each set includes couplings, elbows, anchoring hardware and tools for pipeline installation.

The pump stations provide the energy to boost the fluid pressure for maintaining flow along the pipeline. Each pump station has 2 800-GPM 3-stage centrifugal mainline pumps, 1 for operation and 1 on standby. The pumps can boost the pressure to 650-700 pounds per square inch (psi). A receiver and launcher assembly can inject or eject the scraper from the pipeline. A strainer assembly is included to keep debris from entering the pump. A 3,000-gallon collapsible fabric tank is used to store fuel at the pump station for pump engine operation. A control system provides both manual or automatic operation. Various valves, connectors and a piping manifold are also used to assemble a complete pump station.

The IPDS can be installed, operated and recovered by U.S. Army tables of organization and equipment (TOE) units. Engineer construction units install and recover the pipeline and pump stations. Quartermaster petroleum terminal operating units install and recover the TPTs and operate the total system.

OPDS Interface

When host nation fuel sources from a refinery, pipeline or tanker truck are unavailable, the IPDS can receive fuel from the OPDS. The OPDS is a converted seagoing fuel tanker with a three-million-gallon capacity. The tanker can anchor offshore with its own Single Leg Anchor Mooring (SALM). The tanker is equipped with flexible conduit that is stored on reels on board and provides a four-mile standoff by the tanker. The conduit is pulled ashore to the high water mark to interface with the TPT. The tanker pumps fuel ashore using its on-board pumps. Currently, three OPDS tankers are in service.

Contingency Operations

- *Operation Desert Shield/Storm*

The first real world test of the IPDS was deployment and use to support U.S. and Coalition Forces during *Operation Desert Shield/Storm* in 1990-91. Fifteen TPTs were deployed to Saudi Arabia and provided a storage capability of 54 million gallons of fuel. Ten of the 15 TPTs in 6 different sites throughout the operational area provided a 36-million-gallon storage capability. The sites were often selected by the tactical commander only 36 to 48 hours before fuel was needed. Although a typical layout of the TPT could include up to three different products, a dual-product configuration for diesel and jet fuel was generally used in Saudi Arabia. In most cases, bulk fuel was received from commercial tankers for ultimate movement and issue to forward-deployed petroleum, oils and lubricants (POL) support units or other TPTs.

Three pipelines totaling 160 miles and 14 pump stations with associated equipment were also used in Saudi Arabia. The IPDS pipelines tied in with existing commercial facilities with special header manifolds manufactured on site. Army units connected the IPDS system to commercial terminals and refineries. One pipeline that included 3 15-mile parallel lines ran to an air base that issued over 1 million gallons of fuel on the first day of the war. The IPDS was the best way to support such large deliveries. The system's total throughput was approximately 1.4 billion gallons of jet fuel, 447 million gallons of diesel and 32 million gallons of motor gasoline.

- *Operation Restore Hope*

During the latter phases of *Operation Restore Hope* in Somalia, the Joint Task Force commander called upon the Army to devise a method to replace a Marine Corps floating amphibious assault hose line. The Marine hose line was bringing the bulk jet fuel into the country from an offshore OPDS tanker to a three-million-gallon Marine Corps petroleum tank farm near the Mogadishu airport. To meet this chal-

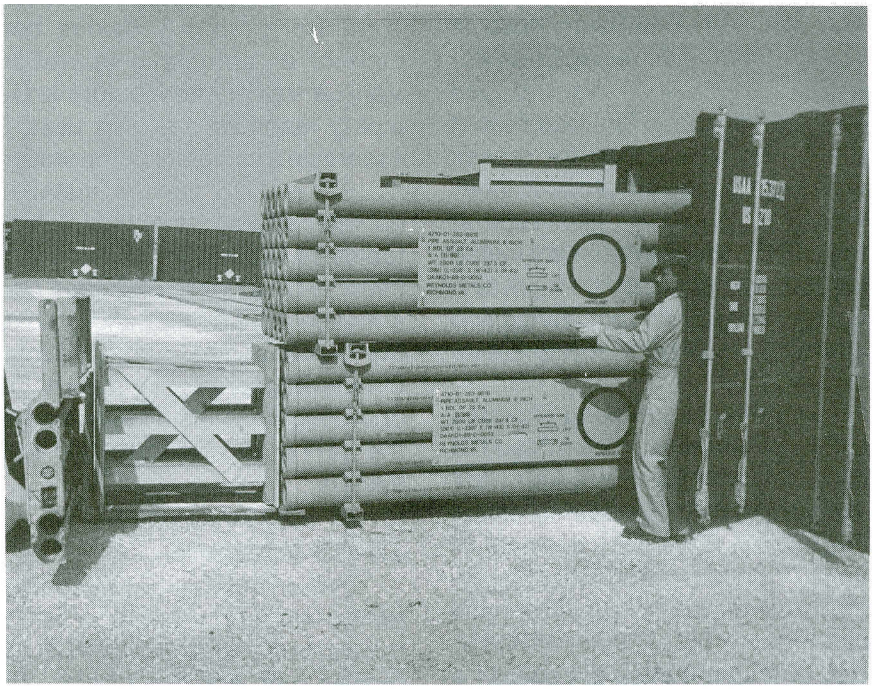
lenge, the Army decided to install a pipeline system from the Mogadishu seaport to the airport and receive fuel directly from an OPDS tanker docked at the port. The pipeline trace was estimated at 2.5 to 3.5 miles. A tailored four-mile IPDS pipeline system was assembled and included the hardware components to interface with the OPDS tanker's on-board discharge pump and the tank farm. The system was shipped to Somalia in containers for installation by the Army within a week. The system currently provides bulk fuel for United Nations Forces.

The Army had to recover IPDS equipment deployed to Southwest Asia for future contingency use. Approximately 85 percent of the equipment was recovered and retrograded to Sierra Army Depot (SIAD), where it is currently being reconstituted under the central management of the Office of the Project Manager, Petroleum and Water Logistics (PM-PWL), St. Louis, MO. The recovery operations in Southwest Asia included cleaning and repacking the equipment into over 2,300 20-foot International Standardization Organization (ISO) containers. The IPDS equipment deployed to Southwest Asia was shipped in wooden crates. Based on the lessons learned in Southwest Asia, the Army decided to reconstitute the IPDS into the same type of containers used for retrograde operations.

The depot's total reconstitution effort involves the inventory, repair, packaging, packing, marking and storage of a projected U.S. Army Forces Command (FORSCOM) requirement of 16 TPTs, 845 miles of pipe and 92 pump stations into over 4,300 ISO containers. In addition to the Southwest Asia returns, the balance of the IPDS equipment that was not deployed to Southwest Asia was recently transferred from Pueblo Army Depot (PUDA), where it was initially stored. Deliveries from new procurements are also arriving at SIAD. The other key ingredients of the reconstitution effort are continued funding from the Army Materiel Command (AMC) and manpower requirements at SIAD. Containerization provides significant improvements in the rapid strategic deployment and ease of movement of the IPDS once within the theater of operations.

Collective training with IPDS is a major challenge because operational project stocks are not in the hands of units during peacetime. The FORSCOM Petroleum Training Module (FPTM) was established at Fort Pickett, VA, to meet this requirement. The FPTM provides petroleum pipeline, terminal and construction training to Active and Reserve Component Quartermaster and Engineer units according to their TOE mission statements and U.S. Army doctrine and concepts. The module consists of approximately two-thirds of a TPT, 21 miles of pipeline and 4 pump stations.

The annual training cycle runs from April to October with units rotating through on a scheduled basis. During rotations, units plan the pipeline along with the number and placement of pump stations and storage terminals based on the stated fuel requirement. A route reconnaissance is also completed. Each year Engineer units install and test the pipeline and pump stations. Quartermaster units install the terminal, operate the system and recover the terminals. Engineer units recover the pipeline and pump stations. Classroom training is held to a minimum, dealing only with doctrine and unique IPDS components. A fulltime training support contractor provides overall on-site management that includes coordinating and conducting all training and sustainment of IPDS equipment between training cycles.



Personnel at Sierra Army Depot pack equipment into ISO containers because containerization greatly improves the strategic movement and tactical employment of the Inland Petroleum Distribution System.

Army petroleum officers, noncommissioned officers and soldiers are individually trained on the IPDS at the Petroleum Training Facility (PTF) at Fort Lee, VA. The PTF, operated by the U.S. Army Quartermaster Center and School, incorporates all aspects of IPDS

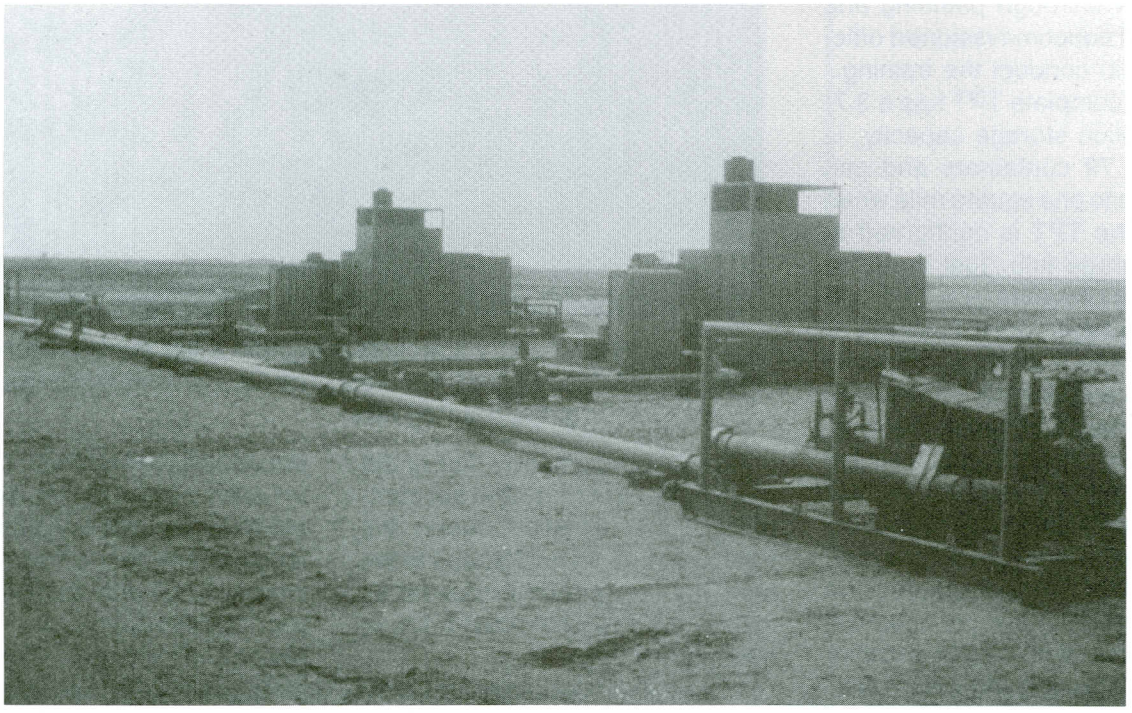
operation in a fixed facility. The PTF consists of 9 above-ground steel storage tanks totaling over 2 million gallons, 2 210,000-gallon collapsible tanks, 1 pump station and 6 miles of pipeline.

The Army realized early in the IPDS life cycle that a system integration contractor, abreast of current petroleum pipeline technology, would be necessary. In 1984 the U.S. Army selected a civilian contractor to assist in developing, procuring and testing the petroleum distribution system that became known as the IPDS. Since then, the private company has remained under contract with the Army providing a multitude of services such as engineering, logistics, and training support.

The contractor played a key role during the deployment, operation and recovery of IPDS during *Operation Desert Shield/Storm*. Contract personnel participated in the deployment and operation of the pipeline system in Somalia and assisted Eighth United States Army (EUSA) in planning for a contingency petroleum pipeline in Korea. Also, the contractor gives on-site technical assistance at SIAD for reconstitution and also develops the packaging, packing and other logistics plans to configure and store IPDS at SIAD for contingency use. The original contractor is also the current training support contractor for the FPTM at Fort Pickett.

The IPDS is a unique support system that has successfully passed the ultimate test: supporting a deployed force in combat. The IPDS has demonstrated its support of a large deployment where massive quantities of bulk fuel are required at the right time in the required quantities. The system continues to maintain a critical logistical capability that assures the readiness of U.S. military forces.

LTC Patrick M. Holder was a student in the Program Management Course, Defense Systems Management College, Fort Belvoir, Virginia, at the time this article was written. He previously served as Logistics Officer, Project Manager, Petroleum and Water Logistics, U.S. Army Aviation and Troop Command, St. Louis, Missouri. A graduate of the Command and General Staff College, Armed Forces Staff College and Logistics Executive Development Course, LTC Holder has served in a variety of logistics and acquisition assignments. He holds a bachelor of business administration degree from the University of Texas at Austin and master's degree from Webster University.



These 800-gallons per minute mainline pump stations boosted pressure along the pipeline in Southwest Asia.

Tactical Petroleum Terminal

CPT Teresa A. Galgano

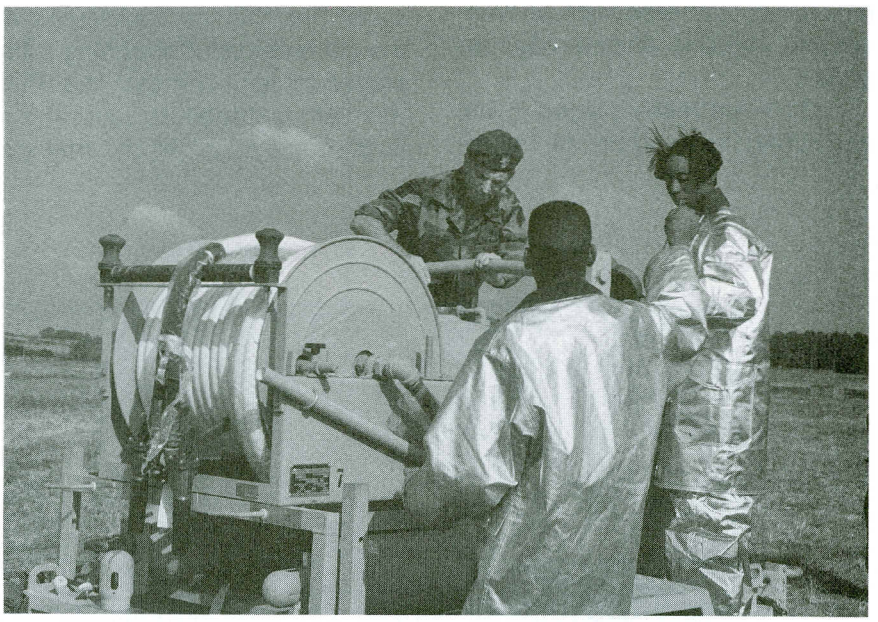
How do you train for your critical wartime tasks when your equipment is kept in depot storage? This question plagues the three active duty pipeline and terminal operating companies, the 109th, 267th and 549th Quartermaster Companies. Their wartime mission is to operate 90 miles of the Inland Petroleum Distribution System (IPDS) and one tactical petroleum terminal (TPT). One solution involves maintaining a training fuel unit that is one-third of a TPT at Fort Story, VA, with the 549th Quartermaster Company. The 109th Quartermaster Company recently trained on this system at Fort Lee, VA, along with the 267th Quartermaster Company. The key to this successful training is thorough planning and letting the noncommissioned officers (NCOs) conduct the training.

The complete TPT has a 3.7-million-gallon storage capacity, is stored in 72 containers and can occupy up to one square mile when set up. The TPT is configured at depot storage into "fuel units." A fuel unit is one-third of a TPT that gives petroleum units flexibility in bulk petroleum storage missions. A fuel unit consists of six 210,000-gallon fabric tanks, a tanker truck receipt manifold, and a fuel-dispensing point. Included in the fuel unit are two trailer-mounted floodlight sets and three trailer-mounted fire suppression kits. The fire suppression consists of purple K, a chemical which extinguishes the fire, and then an aqueous film-forming foam (AFFF) that prevents re-ignition.

The 240th Quartermaster Battalion S3 coordinated the 17 trailer loads necessary for transporting the system from Fort Story with the accountable officer of the 549th Quartermaster Company for the system. The fuel unit is normally stored in a climate-controlled warehouse built specifically for the fuel unit. The receipt and inventory of this equipment took five days. Weeks before the mission, the area was surveyed and a plan developed for placement of the system. The terminal and pipeline platoons were divided into three teams and assigned specific tasks. The operations order was briefed to the company during the receipt phase. Safety and accountability were stressed during the briefing to ensure no damage to the equipment or packing material so the system could be used for future training.

The first week involved critical training for the company's NCOs. Part of the wartime mission involves receiving the fuel unit from depot stocks. Practicing the receipt of depot-stored equipment should reduce the set up time in an actual contingency operation. NCOs inventoried all equipment and then staged it in the correct location. Staging the boxes in the location reduces soldier labor and confusion during set up.

The terminal platoon sergeant was in charge of setting up the system. On a Monday morning the entire company was on site to help establish the system, particularly in laying the 18 210,000-gallon tanks that come with the TPT. The fabric tanks are 66-feet X 66-feet with 11 handles on each side and require 40 soldiers to manually lay out each collapsible tank. Once the fabric tanks were laid out, only soldiers who are petroleum supply specialists remained on location. Teams consisting of two squads, led by a staff sergeant, then began to lay out the manifold system around each tank. Most of the system was laid out the same day. The hose lines which connect the various sections of the system are joined by 4-inch single groove couplings (with a two-piece



Two petroleum supply specialists explain a fire suppression kit to Major General Robert K. Guest, The Quartermaster General, at a Fort Lee, Virginia, training site.

A 210,000-gallon collapsible fuel tank on top of a berm liner (foreground) connects to a hose assembly being prepared by petroleum supply specialists.

Soldiers connect the six-inch suction hoses between a fuel tank and a 650-gallons per minute pump.

Photographs by SPC Agusta Santiago

gasket). Grease is then applied to the coupling to complete the seal.

The soldiers connected the system to a 6-inch aluminum pipeline to get a better feeling for where the fuel unit fits into the big picture. The fuel units are designed to be located anywhere along the pipeline where bulk storage and reserve capacity is needed. For environmental reasons, no fuel was actually put into the fuel unit. The 109th Quartermaster Company and the 267th Quartermaster Company both trained on this equipment over the next few days. The petroleum supply specialists enjoyed this opportunity to train on their wartime mission and to work as a team. The after action review revealed that the soldiers noticed the positive effect extensive planning and coordination had on this critical training exercise.

When soldiers do not own their go-to-war equipment, special efforts are necessary to ensure the essential training. It is imperative to be innovative and to remain flexible to potential training opportunities. The movement and inspection of a wartime stock item are just examples of the "windows of opportunity" that can provide outstanding hands-on training not otherwise available.

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Fuel Quality Surveillance

SFC Robin J. Napoleon

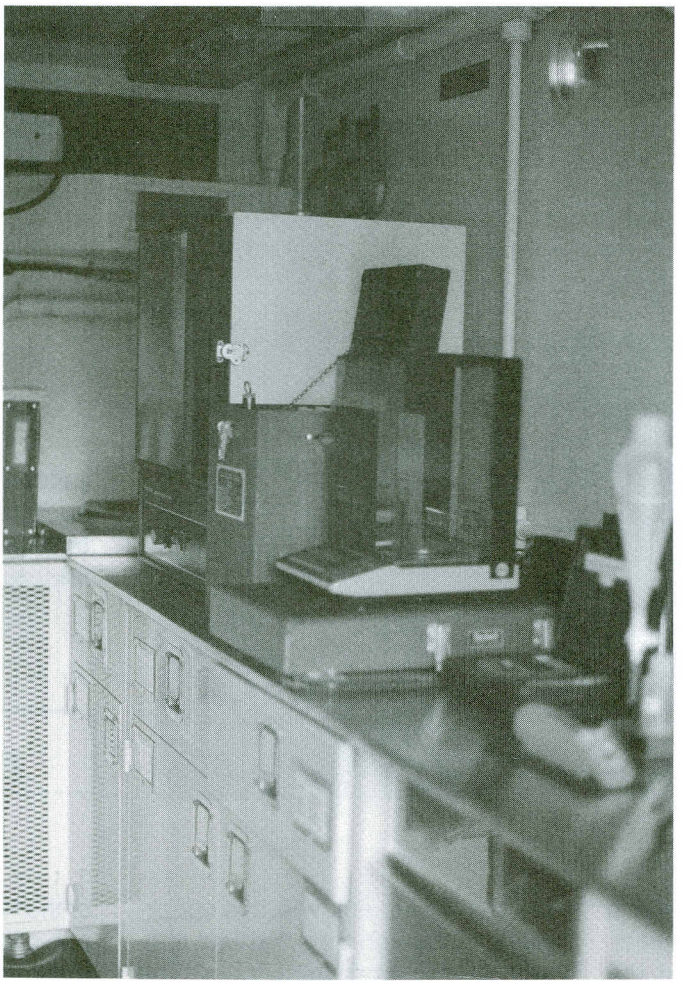
Every day the military spends millions of dollars on fuel. When procured, this fuel had to meet certain standards. A variety of inspection procedures, laboratories and testing kits ensure that these standards are met until the fuel is consumed. This is all part of the Army's quality surveillance (QS) program.

QS is everyone's responsibility. Soldiers must know and follow proper procedures to maintain quality. From the time the product leaves the refinery, whether by tanker, pipeline, railcar or truck, tests are run continually before fuel reaches the end user. Before offloaded for storage, the product must be tested. While in storage, some characteristics are checked daily, others semiannually.

Base Laboratory

Several laboratories or test kits within the military system test fuel. The largest is the base laboratory, capable of performing any series of tests including procurement testing. The staff consists of one officer (specialty code 92F), 10 petroleum laboratory specialists (military occupational specialty (MOS) 77L), and a reports clerk. The base laboratory provides support to other laboratories in the theater.

The base laboratory can be a fixed facility, such as the one at the U.S. Army Quartermaster Center and School, Fort Lee, VA, or at the 502d Laboratory in Okinawa. The base laboratory also comes in 26 crated cabinets transportable by C-130 aircraft. This requires extensive Engineer support for constructing a building and installing utilities. This construction would normally take place near the port or base terminal of a petroleum pipeline and terminal operating battalion. It takes approximately 48 to 72 hours to become fully operational after construction and utility installation.



Inside An Airmobile Petroleum Laboratory

The Army has plans for a new base laboratory consisting of two trailers. This would end the need for Engineer support and would decrease deployment and set up times.

Forward of the base laboratory is the mobile petroleum laboratory. The mobile laboratory can perform all series of fuel testing except procurement testing (except under emergency conditions). There is limited testing for packaged products. The mobile laboratory is staffed by six petroleum laboratory specialists, a reports clerk, and one officer. Their mission is to support the petroleum terminal and operations battalions, petroleum supply battalions, multiproduct pipeline systems, and ocean terminals. They also provide technical support to personnel in their area, airmobile laboratories, and to various test kits.

Mobile Laboratory

The mobile laboratory is housed in a 10-ton semitrailer van. It requires a 60-kilowatt generator, a water supply and wastewater disposal capabilities. The laboratory is C-141 deployable with the landing gear and storage boxes removed. This laboratory can be operational within 12 to 14 hours after arriving on site. Only two active duty units are authorized a mobile laboratory: the 240th Quartermaster Battalion at Fort Lee, VA, and the 260th Quartermaster Battalion at Hunter Army Airfield, GA. The remaining mobile laboratories are authorized in reserve units. Due to its mobility and extensive testing capabilities, the mobile laboratory has deployed to Saudi Arabia, Somalia and a myriad of military exercises.

More flexible than the mobile laboratory is the airmobile laboratory. These laboratories can be transported by CH-47 helicopters, either

sling loaded or carried internally. This allows set up of the airmobile laboratory almost anywhere. Also, it can be transported on a five-ton cargo truck supplied with each laboratory. Once on site, the airmobile laboratory can be operational within four to six hours. It is staffed by three petroleum laboratory specialists.

Designed with aviation requirements in mind, the airmobile laboratory is not capable of the extensive testing done in the base or mobile laboratories. It is capable of testing the characteristics of fuel most affected during movement and for contamination. With the emergence of JP8 as the single fuel for the battlefield, all fuel will be handled as if the end user will be an aircraft. Therefore, the airmobile laboratory is perfectly suited for this new development.

Testing Kits

For units handling aviation fuel but not authorized an airmobile laboratory, the Aviation Fuel Contamination Testing Kit was developed. A single soldier can use this portable kit to perform three critical tests before refueling an aircraft. A check for particulate contamination uses the kit's filter pads to perform a visual comparison. Water in the fuel can also be detected by using the kit's Aqua Glo test. Hydrometers are also included in the test kit to check the specific gravity or density of the fuel. This is the first test used to identify a product. Every product has a density range. For example, the heavier diesel fuel has a higher density compared to a lighter fuel, JP4.

Density is the only test in the Sampling and Gaging Kit. It is used as the final check for identification of the product. This kit also contains a weighted copper beaker sampler and gaging tape and paste. The operator is a petroleum laboratory specialist or a petroleum supply specialist (77F).

The latest development in the Army's laboratories and test kits was the Captured Fuel Test Kit. This handheld kit will be deployed forward with Armor and mechanized Infantry units. It determines if captured fuel can be used in an emergency situation.

As the Army changes, so does the need for equipment. From lessons learned through deployments, new developments arise. After *Operation Desert Shield/Storm*, several leaders expressed the need to develop equipment that can assess the quality of fuels and lubricants in or near the battlefield. The Petroleum Quality Analysis System (PQAS) is designed to meet that need.

Mobile Petroleum Laboratory With 60-kilowatt Generator

Petroleum Quality Analysis System

PQAS would provide a rapid petroleum analysis capability as far forward as possible. Modern technologies such as Near Infrared Spectroscopy, Gas Chromatography and Fourier Transform Infrared Spectroscopy will provide multifunctional testing capabilities that are smaller and possibly portable by a soldier. This equipment would then be placed in an all-terrain vehicle to improve mobility. PQAS could replace some of the existing laboratories and test kits.

Whether using new technology or an old standby, the Army's petroleum laboratories and kits are there to check the quality of the fuel. One thing must be remembered, though. Without a conscientious soldier, all the modern technology cannot keep the quality of fuel up to standards. It is up to the soldier to turn the correct valves, put the correct fuel in the tank, take proper samples and to send samples to the laboratory in a timely manner. The QS program can work providing everyone works together while "Fueling the Force."

SFC Robin J. Napoleon is currently the Quality Surveillance Noncommissioned Officer In Charge (NCOIC) for the 49th Quartermaster Group (Petroleum) at Fort Lee, Virginia. Before coming to the group, she was the Quality Surveillance NCOIC in Somalia while with the 240th Quartermaster Battalion. Other assignments have included NCOIC, Quality Control Branch, 2d Quartermaster Group, Korea; Instructor, Petroleum and Water Department, U. S. Army Quartermaster Center and School, Fort Lee, Virginia; and Quality Assurance Representative, Fort Richardson, Arkansas.

Quality Surveillance Representatives - Middle East Style

CPT Brett D. Weigle CPT Jon V. Ramer

Four quality surveillance representatives (QSRs) are assigned to Defense Fuel Region-Middle East (DFR-ME): one civilian, one Army, one Air Force, and one Navy. All perform the same duties as a petroleum logistics officer and QSR, working on oil tankers all over the Arabian Gulf area. You may think that working with members of other branches of the Department of Defense would be challenging enough, but first throw in working with contractors who often speak little English, throw out your military efficiency, and add the "thrill" of working in one of the most volatile areas in the world today, the Middle East, and now you have a mix for a really interesting job.

So exactly what is this "really interesting" job like? First are the tankers. Loading and discharging ships basically involves meeting the tanker when and where it comes in, observing the gaging of each shore and ship tank, watching the samples being taken, validating the quality and quantity of all the fuels, doing all of the rather involved paperwork, and physically inspecting the interior of every tank to be loaded, sometimes in temperatures of up to 120 degrees Fahrenheit (140 degrees Fahrenheit inside the tank). Compared to that, the rest of our duties seem easy.

Oversight

According to our mission statement, DFR-ME provides management and oversight of all bulk fuels owned by the Defense Logistics Agency in the U.S. Central Command area of operations. This means the 4 QSRs manage 18 contracts at 6 Defense Fuel Supply Points in 4 countries holding 280 million gallons of fuel valued at $175 million. The QSRs also assist in administering each contract, conducting fuel quality and quantity inspections, reviewing quality control plans, and act as liaisons between numerous petroleum companies and the U.S. government.

Our military duties include providing technical assistance to deployed units, acting as the liaison between theater forces and host nations, and assisting in petroleum distribution to all military forces in the Middle East. Of course, deployments are part of the job.

One of our personnel went to Somalia for two months and another to Yemen during *Operation Restore Hope*. We deployed to Al Dhafra, United Arab Emirates (UAE); Riyadh, Saudi Arabia; and Kuwait City, Kuwait, during *Operation Southern Watch*. During *Operation Desert Shield/Storm,* Patriot missile redeployment, *Operation Restore Hope, Operation Earnest Will,* and every major contingency in the Middle East in the past few years, DFR-ME has had personnel on the ground from Day One.

Typical Week

With all of these responsibilities resting on the shoulders of a few people, what is a typical week like?

We start our week on Saturday, because Bahrain is a Muslim country and Muslims consider Friday their holy day. The Muslim work week is from Saturday to Wednesday. With most of the rest of the U.S. military on weekend staffing, Saturday and Sunday for QSRs are usually "paperwork" days during which we FAX and telephone contractors in the Persian Gulf area. Monday through Wednesday we cram in all the communication with the U.S. that everyone else does in five days. Thursday and Friday are our weekend, unless we leave for temporary duty (TDY). There is always at least one trip of some kind each week: off to Jebel Ali in UAE to catch a tanker, or Muscat, Oman, to work with the Royal Air Force of Oman, or just a day trip out to Sitra, Bahrain, to gage some storage tanks. It is rare to have everyone in the office at the same time.

Benefits

Some benefits of a schedule such as this are a tremendous number of trips to picturesque areas rarely seen by Westerners, not to mention great souvenir shopping sites. However, the TDY time can add up very quickly, meaning a lot of time away from families. One of our QSRs spent four of the first six months of his marriage on the road. However, we all know how strategically important this region of the world is, and how crucial petroleum is to the U.S. military mission.

CPT Brett D. Weigle was commissioned as a second lieutenant in the Quartermaster Corps from Army Reserve Officers' Training Corps (ROTC) at the University of Idaho with a bachelor of science degree in chemical engineering. He served as Platoon Leader, Operations Officer and Company Commander of the 110th Quartermaster Company (Petroleum Support (PS)) and as Assistant S3 of the 260th Quartermaster Battalion (PS), both at Hunter Army Airfield, Georgia. He then attended Penn State University where he earned a master of science degree in petroleum and natural gas engineering. He has been a Quality Surveillance Representative with the Defense Fuel Region-Middle East, Bahrain, since May 1992.

CPT Jon V. Ramer was commissioned as a second lieutenant from Air Force Reserve Officers' Training Corps (ROTC) at Troy State University with a bachelor of science degree in computer programming and physics. He served as the Fuels Management Officer (FMO) at Malmstrom Air Force Base, Montana, for three years. He then went to the Royal Air Force, Mildenhall, England, where he held the positions of Base Supply Officer, FMO and Chief of Supply. He has been a Quality Surveillance Representative with the Defense Fuel Region-Middle East, Bahrain, since July 1993.

267th Quartermasters in Somalia

LT Scott B. Tardif

The soldiers of the 267th Quartermaster Company, 240th Quartermaster Battalion, joined units from 27 countries as part of the coalition task force in Somalia for *Operation Restore Hope* about one year ago. On 19 Jan 93, the 267th Quartermaster Company successfully deployed 110 personnel from Fort Lee, VA, to assume control of all bulk petroleum assets in Mogadishu and Log Base Durham at Jilib. The company occupied the southern ridge of Mogadishu airfield. Within a week, the company established command and control of the operation while transitioning with the U.S. Marine Corps 7th Amphibious Assault Battalion.

Daily Mission

On a daily basis, the company completed such missions as the receipt, storage and issue of 300,000 gallons of products; quality surveillance testing for all petroleum products; accountability of all fuel transactions; and the movement of bulk fuel from one tank farm to another.

Unit morale was a major concern and challenge for leaders at all levels, but the unit's morale steadily increased over time. Regular mail deliveries, nightly movies, unit cookouts, and weekend phone calls to the U.S. added to both the overall welfare and morale of the soldiers.

With the recent completion of Joint Logistics Over-the-Shore (JLOTS) Phase II and III testing for the Offshore Petroleum Distribution System (OPDS), the OPDS appears the way of the future. Petroleum logistics in an undeveloped theater will depend on ship-to-shore operations with the Inland Petroleum Distribution System (IPDS). The 267th Quartermaster Company witnessed the importance of ship-to-shore bulk petroleum resupply during the humanitarian relief effort to Somali.

Since Mogadishu had only one port and the port could dock only two seagoing vessels at a time, bulk resupply had to come from an anchored source off the coast of the capital city. The Ready Reserve Force (RRF) ship, S.S. American Osprey, served as the offshore storage complex where about 15 million gallons of product were kept as floating storage. The tanker anchored about 1/2 mile from the coast of Mogadishu. Though the Osprey is equipped with OPDS capabilities, the coral-lined ocean floor prohibited that use. The U.S. Navy overcame this obstacle by using a floating assault hose line as a simple, direct hookup to shore. Roughly 1/2 mile of six-inch flexible conduit ran from the ship to a beach interface and into the Marine Corps Amphibious Assault Fuel System (AAFS).

Class III Resupply

The 267th Quartermaster Company coordinated on a daily basis with the Osprey to provide Class III (petroleum, oils and lubricants) resupply for the coalition task force. In turn, the AAFS was connected to the Tactical Airfield Fuel Dispensing System (TAFDS) with roughly 500 meters of six-inch assault hose line. The TAFDS serviced all aircraft (below C-5) landing in Mogadishu. It also provided emergency resupply to C-5 and commercial aircraft.

Unlike the Army's Tactical Petroleum Terminal (TPT), consisting of 18 collapsible 210,000-gallon storage tanks, the Marine system consisted of 174 collapsible 20,000-gallon storage tanks. We found the Marine AAFS system much more manpower-intensive because of the increased number of tanks, hoses and manifolds. Under normal conditions, the Army would have brought in a prepositioned TPT. However, costs and other constraints meant continuing operations with the existing Marine system.

Marine Sections

The AAFS was broken up into three distinct sections: the main storage area, the JP5 retail site, and the MOGAS (motor gasoline) site. The main storage area, which housed 138 20,000-gallon storage tanks, replenished fuel to the TAFDS and the JP5 retail site. The retail point, which provided fuel tankers and vehicles with JP5 product, was made up of 18 20,000-gallon storage tanks. The MOGAS site contained 18 20,000-gallon storage tanks for a total storage capacity of 360,000 gallons of MOGAS.

In addition to conducting operations in the Mogadishu area, a contingent from the 267th Quartermaster Company created and staffed fuel supply points in Jilib at Log Base Durham and at Kismayo Air Base to provide petroleum product to units operating in the southern region of the theater. The mission was to support Engineer operations repairing the main supply route (MSR) between Jilib, Barderra and Kismayo. Another mission was to support the Quick Reactionary Force on the way to the Kismayo area. Eventually, these soldiers assumed control of the bulk site at Kismayo Air Base and recovered the system when operations in that area were complete.

At roughly the same time that orders came for the 267th Quartermaster Company to redeploy to Fort Lee, VA, the decision was made to construct a 2.5-mile pipeline (IPDS) to supply the storage tanks at the airfield in Mogadishu. The trace of pipeline stretched over coral banks and beaches from the new port to the airfield. In three weeks, 15 soldiers, 30 Somali laborers and 3 systems integrators from a civilian contractor completed the pipeline.

During a 90-day deployment, the 267th Quartermaster Company was responsible for the receipt and storage of over 9 million gallons of bulk petroleum product, as well as the transfer of over 4.7 million gallons of both JP5 and MOGAS to 27 countries and civilian humanitarian relief agencies. Although the description of such an immense distribution system seems overwhelming, the 267th Quartermaster Company efficiently provided outstanding bulk petroleum logistical support during participation in *Operation Restore Hope.*

In keeping with past performance, the 267th Quartermaster Company continues to spearhead modern, battle-focused petroleum logistics for forces throughout the world. The soldiers of the 267th are logisticians who fuel the force.

LT Scott B. Tardif is a graduate of the United States Military Academy at West Point, New York, with a concentration in French studies. Military schools include the Quartermaster Basic Course, Air Assault, and Survival Evasion Resistance Escape. He currently is Terminal Platoon Leader, 267th Quartermaster Company (Petroleum), Fort Lee, Virginia.

NCO Viewpoints From Somalia

The following are some first-hand observations of noncommissioned officers (NCOs) in the 267th Quartermaster Company, 240th Quartermaster Battalion, after deployment to *Operation Restore Hope* in Somalia.

While in Somalia, the 267th Quartermaster Company's main mission was to receive bulk fuel from the Offshore Petroleum Distribution System (OPDS) and the supertanker Osprey. Two products, JP5 and MOGAS, were received, stored and issued by bulk and retail. Our actual mission started at the interface between the OPDS and the Inland Petroleum Distribution System (IPDS) where we received millions of gallons of product a week into the tank farm already assembled and operated by the U.S. Marines. We noted many disadvantages with their system, the Amphibious Assault Fuel System (AAFS). Equipment included 174 20,000-gallon collapsible fabric tanks, and that is just the start of the mass numbers of equipment operated and installed. This is a major disadvantage because the Army has a tank farm system called the Tactical Petroleum Terminal (TPT) which holds more product and has less equipment to operate and assemble. The TPT has 18 210,000-gallon collapsible fabric tanks. Although both systems take a large amount of time to assemble, the TPT is much easier. You do not have to worry about rotating the product forward every day because all you have is 1 210,000-gallon bag to use at a time. In my opinion, the TPT is today's better choice for the Armed Forces, since it is focused toward fewer personnel required to operate a system which is able to receive, store and issue to a greater demand. Overall, the mission in Somalia was a great success because it was accident-free, equipment was safely operated, and all personnel of various ranks gained rare knowledge that their peers will never experience.—**SGT Duane B. Cook.**

While serving in Somalia I had a good opportunity to work a very different aspect of my military occupational specialty (MOS). Although it was petroleum-related, it was a different way to handle the fuel. In fuel-handling there are many ways to transport and dispense fuel with many different systems. In Somalia, the 267th Quartermaster Company had the opportunity to do ship-to-shore operations and Inland Petroleum Distribution System (IPDS) operations. The IPDS consisted of a series of "bags" put together in a module consisting of six bags per module. This system was different because it is a Marine Corps system which the Army does not have. With this system, you must move fuel from module to module, which is known as "leap-frogging." This is not done in the Army system: the Tactical Petroleum Terminal (TPT), which consists of 18 bags with a capacity of about 3 1/2 million gallons of fuel. In Somalia we had about 157 bags with less capacity. To summarize our mission, fuel came from a ship to the bags. The fuel was filtered and sent to two different destinations: the airport and the tanker trucks for redistribution to different parts of the country. Petroleum has many aspects and this aspect was new and interesting to me. Now I am familiar with it and hope to continue to learn more about the petroleum field.—**SGT Lopez S. Mercedes.**

As a petroleum supply NCO, I've had various opportunities to work with different pieces of petroleum equipment. Throughout my career, there have been many occasions where a certain piece of equipment within the petroleum field did not meet the demands of the job. One in particular is the tank and pump unit (TPU). While serving in an aviation battalion, refueling and defueling with this TPU slowed down the operation. Its inability to defuel because of the extra pieces of equipment required for the operation significantly slowed down the flow of fuel. Overall, the Army should eliminate the TPU from inventory and replace it with a more efficient petroleum tank vehicle, particularly one with defueling capabilities.—**SGT Kelvin E. Leaks.**

Liquid Logistics - A Flexible Combat Multiplier

CPT Timothy E. Grysztar

When notification first reached the soldiers of the 110th Quartermaster Company (Petroleum Supply) to deploy to Somalia for *Operation Restore Hope*, it's doubtful many were familiar with the term "liquid logistics." As the days passed and the mission statement became clear, the soldiers of the "Fuelmasters" understood the importance of their task: purify, store and distribute water to a 29-member United Nations humanitarian task force.

At first, the challenge of training fuel handlers to perform as water specialists seemed nothing more than a small hurdle to successful mission accomplishment. The "Fuelmasters" soon realized the complexity of setting up water purification operations and the important role water purification specialists play in a theater of operations.

"The training we received at Fort Lee, VA, before departing for Somalia was invaluable," said LT David N. Dadich, Platoon Leader for the 110th Quartermaster Company. He said the biggest barrier was equipment familiarization. "Many of the soldiers could set up and operate a fuel system supply point (FSSP), but few had any experience operating a Reverse Osmosis Water Purification Unit (ROWPU)."

The ROWPU treats all types of water: saltwater, freshwater and even nuclear, biological, chemical (NBC) contaminated water. The water purification operations in Mogadishu, Somalia, primarily treated both saltwater and freshwater.

From the beginning, the fuel handlers of the 110th Quartermaster Company realized that soldiers in *Operation Restore Hope* required water, and lots of it. Water purification sites were designated at three different locations. The soldiers of the 110th soon realized that fuel supply systems and water supply systems were similar in many ways.

"The bags, pumps and hoses are almost identical to the FSSP," said SGT Gregory Stewart, Squad Leader for the Old Port Water Team. "It's the ROWPUs that take a little time to set up."

Water purification operations ran 24 hours a day, 7 days a week, but the soldiers were prepared. "The great thing about this operation is that it was set up to let the noncommissioned officers (NCOs) run the show," said SGT Darrin Mesch, Squad Leader for the raw water team at Green Beach. "Everyone gave 110 percent effort to ensure we had enough water for everybody." As the days went by, the 110th mastered the art of supplying water to a theater of operations.

The "Fuelmasters" of the 110th Quartermaster Company started the water mission in Somalia in January 1993 and turned it over to their long-awaited replacements in May. After more than 23 million gallons of purified water successfully distributed, the soldiers of the 110th can safely say that liquid logistics is a lot more than just fuel.

At first, training fuel handlers to work as water specialists seemed nothing more than a small hurdle. We soon realized the complexity of setting up water purification operations.

CPT Timothy E. Grysztar, a former Staff Sergeant, is a graduate of Columbus College, Georgia, with a bachelor of arts degree in both finance and management. His military education includes the Infantry Basic and Quartermaster Officer Advanced Courses, Airborne and Jumpmaster Schools, Special Forces Qualification Course, and Defense Language Institute (Spanish). He has served as a Platoon Leader, Executive Officer, Assistant Battalion S4, and Staff Officer for the 593d Area Support Group and as a United Nations Military Observer in Africa. He is currently Commander, 110th Quartermaster Company (Petroleum Supply), Hunter Army Airfield, Georgia.

Soldiers establishing camp operations at logistics support activity in Jilib, Somalia

Logistics Support Activity in Somalia

CPT S. Carter Corsello

***Operation Restore Hope* served to illustrate a number of challenges that face logisticians in today's armed forces. Logistics operations were fast-paced and extremely reactive, which resulted in a premium on quick, effective and flexible planning. I will offer insight for supply operation activities in the future by describing the organization and actions taken by soldiers of the logistics support activity (LSA) located at Jilib, Somalia, during February 1993.**

On 28 Jan 93, I was informed that I would go south and establish a logistics activity in the area of Jilib, a small village 120 miles from Mogadishu. The next morning I was commanding a 29-vehicle convoy to Jilib. After 17 hours of rough roads and mechanical breakdowns, we arrived in Jilib.

The mission of the LSA Task Force was to support approximately 1,350 soldiers from the Engineer Task Force and provide backup support for the 10th Mountain Division soldiers in the area. The 36th Engineer Group from Fort Benning, GA, was to build a road network into the heartland of Somalia. This would allow non-government organizations (NGOs) the accessibility to feed and repatriate the interland. Their task force for the mission was named Durham. Their goal was to complete the road network by February 28.

While the Engineers helped my assigned soldiers clear the site, I learned the capabilities of my activity and established the LSA's chain of command. The LSA was composed of four basic functional areas: petroleum, oils and lubricants (POL), Class I (rations), water purification and maintenance support. There were 56 soldiers from 9 different companies, 2 battalions, and the group headquarters. Clausewitz's statement "... in war, all things are simple, but even the simple things are difficult" could easily apply to many of the actions during the existence of the LSA.

The POL section consisted of 17 soldiers. The team worked extremely well together. During the first two days, all the soldiers were very busy getting the three 20,000-gallon collapsible tanks and equipment on the ground. It was impressive to see a team work so efficiently.

Our materials handling equipment was a high mobility materiel

handler, more commonly called a "C." It was one of the vehicles that broke on the convoy. Without lift capabilities, the team had to download the collapsible storage tanks and equipment by hand. Within eight hours of selecting the POL site, the collapsible tanks were in position, the initial supply of slightly less than 30,000 gallons were downloaded, and we served the first vehicle.

A POL subsection of two retail tankers and five soldiers had arrived a week earlier. They were to go forward with the 63d Combat Support Engineers (CSE) as they built the road toward Barbera. The requirement to have this asset on hand was unfounded. The 63d eventually moved 27 miles up the road that they built from the Task Force Durham's base camp. The 63d built the remaining 30 miles to the link from there.

The 63d had a heavy expanded mobile tactical truck (HEMTT) tanker. It could travel the newly constructed road in 30 minutes. Our tankers took over an hour. In addition, their daily fuel consumption never came close to the original projections of 6,000 gallons a day. The Engineers' fuel consumption estimate was based on all equipment running all day. They could only have so many pieces of equipment at one time actually building the road. The rest of the equipment could not maneuver. Their average fuel consumption was close to 1,200 gallons per day. We went to them and resupplied the HEMTT every other day.

The 60,000-gallon storage capacity of the field distribution system was not used. Full tankers came and were dispatched to Task Force Kismayo without even offloading. The average distribution from the storage site was just over 1,200 gallons a day for 8 to 12 vehicles.

Three soldiers from the 226th Quartermaster Company, Fort Drum, NY, were assigned to the Class I section under the 548th Supply and Service (S&S) Battalion. The building selected for the rations was one of the three buildings within our established perimeter. Since there were no entrances that materials handling equipment (MHE) could go through, all the supplies were placed in the building by hand.

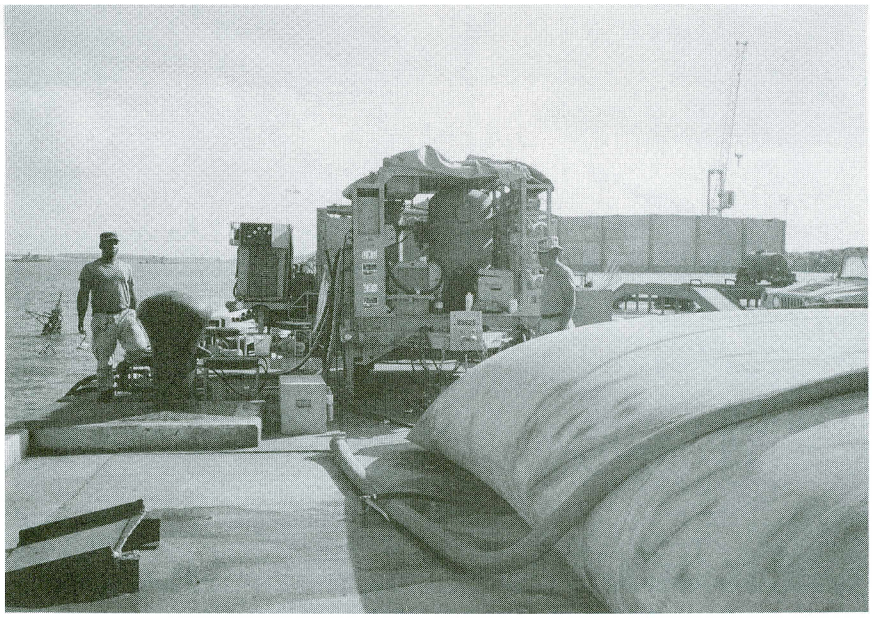
Because the road was so rough, the initial couple of loads saw at least 30 percent water bottle loss. The bottom boxes would break, causing the rest of the load to shift. Two rooms of bottles stacked five feet high were the result. The loads were eventually stacked less than 5 cases high, and this resulted in less than 10 percent loss from breakage.

One mistake was sending B-rations into an area that could not prepare the food. The Class I warehouse was controlled by the 548th S&S Battalion. The operations officer of the 240th Quartermaster Battalion, the responsible headquarters, did not know the B-rations were coming. The 548th decided to send the rations, not the responsible headquarters. In the end, we issued a few B-rations. Just under 20,000 meals stayed at the LSA for the duration of the exercise until transported back on three trucks to Mogadishu.

The water purification section arrived one week after the main body. The 14 soldiers comprising 2 teams arrived with 2 600-gallons per hour Reverse Osmosis Water Purification Units (ROWPUs), 8 3,000-gallon collapsible fabric tanks (onion skins), 2 20,000-gallon storage tanks, and other required equipment.

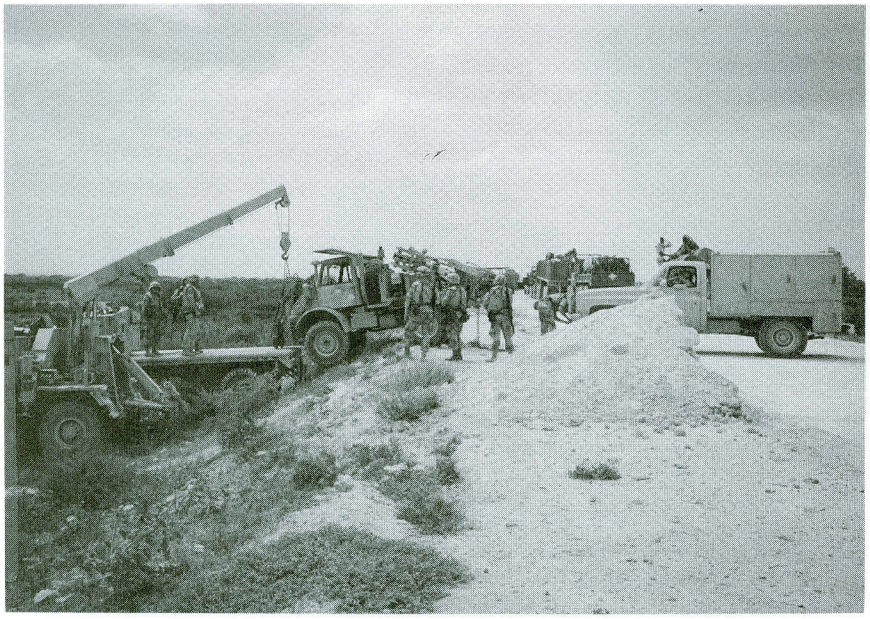
The collapsible 20,000-gallon tanks were to go next to the well where the ROWPU operated and be used for storage. This never happened. The well was not operable because the raw water pump's vertical lift capability was only 20 feet. The well was 40 feet deep. The tasking to complete one of the wells in the Jilib area went to the Navy. Several wells were available, but the one tested and most ready for completion was the well at Bandar Salom. While we waited for the Navy engineers to arrive, one team replaced a 10th Mountain Division team on the bank of an irrigation canal located three miles outside Bandar Salom between Bandar Salom and the Task Force Durham base camp.

The canal location was not ideal. The intake was from surface water. Seemingly millions of "rolly bugs" crawled over the equipment. The preventive medicine team reluctantly



Soldiers producing and storing water using a 600-gallons per hour Reverse Osmosis Water Purification Unit (ROWPU) and a 20,000-gallon collapsible storage tank

approved the water for bathing only. They later changed their mind when a soldier found a "rolly bug" in his canteen. Attempts were made to prevent the bugs from getting into the tank. If the tops of the onion skins were off during the day, no bugs would get into the water. The bugs apparently sought the shadow of the cover. Unfortunately, by doing so, dust that carried cow fecal matter would land in the water because several herds passed the site daily.



Rough roads on the way to a small village 120 miles from Mogadishu led to problems with vehicles in the convoy.

The original site closed after the Navy arrived with the completion kit. The overall production of the Bandar Salom site was hampered by the ability of the sump pump to deliver water. It pumped at 16-gallons per minute (GPM) while the ROWPU could pull at 36-GPM. Thus, the well pump worked for two hours filling a 3,000-gallon bag, and the ROWPU worked for 20 minutes before it would have to shut down. The fix was to idle the production capabilities down to the same as the well pump. Also, no water was wasted. The "bad" water produced by the ROWPU recycled into the reserve tank along with the "not-so-bad" water. Together with the raw water from the sump pump, a production of 14-GPM was achieved.

The water purification section adjusted operation hours to meet the demand. Although no water needed to go to Kismayo, daily consumption in the Jilib area of operation was 4,000 to 6,000 gallons a day. The 331 soldiers at Bandar Salom used approximately 3,000 gallons per day by showering. The other units used less because of using Australian shower equipment.

The most helpful factor in the water mission was the ability to get water from Mogadishu. Each logistics package or "log pack" that arrived had 10,000 gallons of potable water carried by two 5,000-gallon tankers. The original concept of the tankers was to transport only enough water to start the retail operation of the 20,000-gallon storage tanks. I chose not to place the 20,000-gallon tanks until the ROWPU well site was operable. When the well was finally completed, Task Force Kismayo asked for one water team with storage capability to set up at the port for wash rack operations. That is where the two 20,000-gallon collapsible tanks went.

I continued to draw water from Mogadishu even though the Bandar Salom well production could have kept up with the area demand. One problem was that each unit lacked enough organic potable water storage capability for the demand without traveling the 15 to 40 miles with the water trailers or "water buffaloes" several times a day. Also, the task force elements, the LSA included, had no storage capability. The fix: place 3,000-gallon onion skins at each site. In doing so, the 5,000-gallon water tankers had to stay to distribute as needed. The soldiers and equipment were replaced each log pack. The 10,000 gallons delivered each log pack satisfied the Task Force Durham base camp and 63d CSE, who had moved forward, while the ROWPU produced mainly for the Bandar Salom camp only.

The original orders for the maintenance support team (MST) told them to "provide direct support maintenance." The company's orders given to the staff sergeant in charge of the MST said to report to the S1 of the task force. My operations order stated that the staff sergeant was to report to me. Not until we had good communications was the issue settled. The MST was part of the LSA, not Task Force Durham.

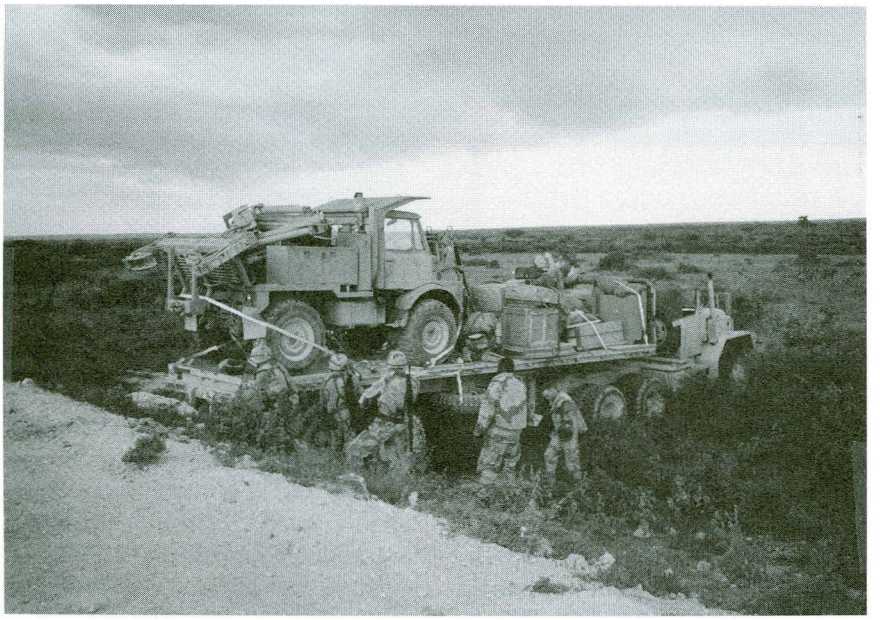
The noncommissioned officer in charge (NCOIC) of the MST relayed that he was doing organizational maintenance for the Engineers and LSA. The Engineers, as well as us, formed without organizational capabilities. This provided good opportunities to cross-train some of the younger soldiers in different levels of maintenance.

Two specialists operated the radio teletypewriter (RATT) effectively to get accurate communications back and forth from battalion. The Logistic Status Report (LOGSTAT) was sent through teletype. The other great aspect of the RATT was the Military Affiliated Radio System (MARS) capability. This is where amateur radio operators in the U.S. receive a transmis-

sion and complete a phone patch. The original antenna configuration did not allow for MARS capability. The fix was to make a field expedient antenna out of WD-1 wire.

Within the 17 nights the team had MARS capability, the team made over 500 attempts at communication, with more than 350 connections. The connections started around 2200, and many times continued until the operators had to switch back to normal operations at 0600. Soldiers from more than 30 different companies made connections. They ranged from 10th Mountain soldiers from Kismayo to 7th Transportation Group line-haul soldiers from Mogadishu. On two occasions, a Military Police (MP) platoon stopped and stayed the night just to get the opportunity to make calls back home.

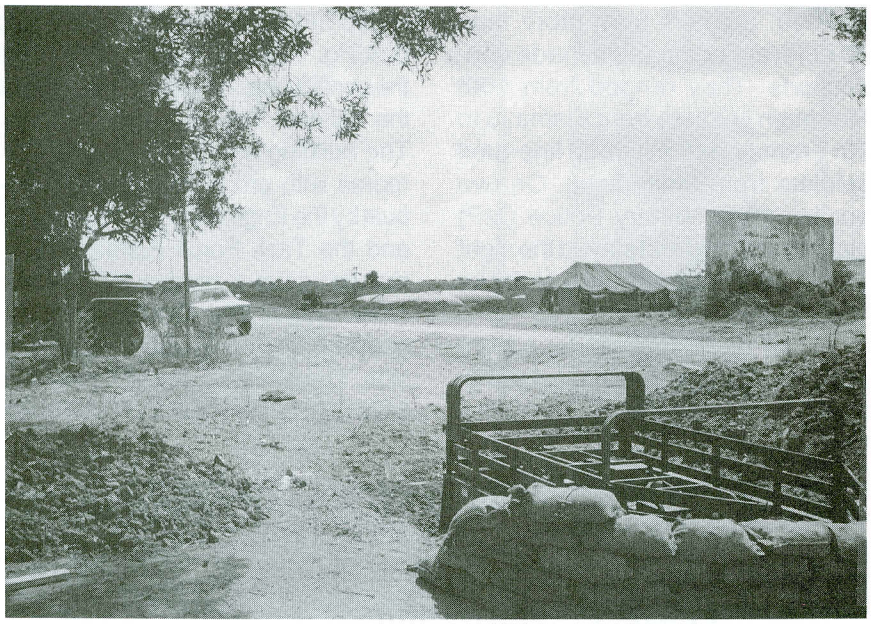
The Joint Task Force commander's visit happened to coincide with a ceremonial raising of the Somali flag in Jilib in front of the designated civic building. This was the first time since the conflict began that the Somalis had the national flag displayed in town. The building had nothing more than rooms with crude tables and chairs built by the Engineers. Children sang, and the Task Force Kismayo commander gave a plaque to the head elder. Shortly after the visit, the Engineers neared completion of their mission. The 63d CSE linked up with the 642d CSE by the 13th and had a Restore



Solders ready a high mobility materiel handler for transport after mechanical breakdown enroute to Jilib.

The following units comprised the logistics support activity (LSA):

Headquarters and Headquarters Company
(HHC) 593d Area Support Group
HHC, 240th Pipeline and Terminal Operating Battalion
267th Pipeline and Terminal Operating Company
418th Transportation Company
360th Transportation Company
HHC, 548th Corps Support Battalion
18th Quartermaster Platoon (Perishable Subsistence)
226th Supply Company (Direct Support)
602d Maintenance Company



A POL (petroleum, oils and lubricants) point of a logistics support activity in the Somali desert.

Photographs by CPT S. Carter Corsello

Hope Road opening ceremony on February 18.

Though the Engineers completed their mission over two weeks early, they continued operations from the base camp in Jilib. On February 19, they picked March 1 as the date to move to the base camp in Merca. We began to pull stakes on February 21. Realizing that the need for a full petroleum distribution system was unfounded, the POL team uploaded the fuel into four tankers.

C/3-14 Infantry moved out on February 22. This was to coincide with the Belgians coming to their location. The scheduled change of command from U.S. to Belgian control was the following day. However, the Infantry moved out as scheduled, but the Belgians stayed in Kismayo. Apparently the two primary Somali clan leaders in the area began fighting again. This left the base camp in Jilib defended by fewer than 40 soldiers of the two task force elements, the LSA and the Task Force Durham headquarters.

Actions at the base camp included moving the remaining rations within Task Force Durham's portion of the camp, a plan to consolidate forces inside the base camp of both task forces, and increased guard activity. The LSA's primary mission became self defense, not supply, though supply activities still occurred. On March 1, most LSA elements returned to their parent units.

The single most important lesson I learned as the commander was the importance of a concise, coordinated command which ensures that the various command elements respect the activity as a separate element regardless of unit ties to other commands. All coordination of effort must flow through the responsible headquarters. A task force commander will rarely have authority for missions such as the LSA in Jilib. Further, the commander may not ever gain direct rating power over the NCOs. Does the NCO follow his rater or the officer on site? Both have jurisdiction. One has authority. Luckily, no conflict of command jurisdiction affected the mission. It occasionally did, however, hamper operations.

Overall, direct resupply would have been a better way to use assets than the LSA (logistics base) concept. Individual logistics packages directly from the direct support units in Mogadishu could have served this area amply with the same number of soldier requirements for the logistics train, yet without the overhead of the LSA itself. Based on the projections given, the logistics base concept seemed sound. In reality, there were only three customers. We supplied them with more service than doctrine requires. We were successful completing the mission. A Quartermaster rarely has the opportunity to service fellow soldiers as we did in Somalia.

CPT S. Carter Corsello has a bachelor of arts degree in psychology from Knox College, Galesburg, Illinois. He is also a graduate of the Quartermaster Officer Basic Course, Airborne and Rigger schools. His previous assignments include Platoon Leader, 543d Heavy Materiel Supply Company, Platoon Leader and Accountable Officer, 295th General Supply Company, Fort Lewis, Washington; and Group Budget Officer, 593d Area Support Group, Somalia. He is currently attending the Quartermaster Officer Advanced Course. His next assignment is Taegu, Korea, 4th Rigger Detachment Commander.

Fuelmasters on the Move

CPT Melvin T. Whittenburg

Although the military is downsizing, combat power must remain effective. Logisticians must remember that good logistics is combat power. To win, logisticians must provide these four essential classes of supply: fuel, ammunition, medical and transportation. The 260th Quartermaster Battalion (Petroleum Supply (PS)) provides all four. A multifunction battalion, the 260th is responsible for rapid logistical support on demand.

Located at Hunter Army Airfield (HAAF), GA, the battalion is the Army's only active duty petroleum supply battalion. The peacetime configuration is very diverse. The battalion consists of seven subordinate units. The Headquarters and Headquarters Detachment (HHD) provides command and control and petroleum laboratory support. The 24th Ordnance Company is a direct support (DS), conventional ammunition supply company. The 51st Transportation Detachment is a transportation/movement management detachment. The 84th Transportation Company is a general support (GS) light/medium truck company (cargo). The 110th Quartermaster Company (PS) is a GS petroleum supply company. The 172d Preventive Medicine Detachment (Sanitation Heavy (SH)) provides sanitation support. The 416th Transportation Company (Petroleum) provides distribution support of bulk petroleum.

During war the 260th would provide one of the following:

- Command and control, administrative, technical and operational supervision over assigned and attached petroleum supply and transportation (petroleum) companies. The battalion also supervises the command quality surveillance program.
- Command and control, administrative, technical and operational supervision over assigned and attached combat service support companies. This mission is part of the XVIII Airborne Corps, 1st

Corps Support Command. The battalion also supervises the command quality surveillance program.

HHD supports the battalion headquarters and provides petroleum laboratory support. The mobile petroleum laboratory (semitrailer) is one of two active duty Army laboratories.

The 24th Ordnance Company establishes and operates ammunition supply facilities for receiving, storing, rewarehousing and issuing conventional ammunition. The company provides ammunition support with supporting missions of relocating, establishing and defending its area of operations. The 24th can operate two separate ammunition supply points (ASPs) on a 24-hour basis.

The 51st Transportation Detachment provides movement control for moving personnel/materiel (less petroleum pipeline) within the area of responsibility.

The 84th Transportation Company provides transportation for movement of general cargo and personnel by motor transport. The company is equipped with 48 5-ton cargo trucks, 8 5-ton tractors, and 16 stake and platform (S&P) trailers. The company can single lift 2,200 short tons per day (local haul) and single lift 960 personnel.

The 110th Quartermaster Company (PS) establishes and operates temporary GS petroleum storage facilities for divisional and nondivisional units. The company will lay, operate and retrieve assault hose lines. The 110th Quartermaster Company (PS) will maintain a portion of the command bulk petroleum reserve stocks. Equipment includes four fuel system supply points (FSSPs), 36 50,000-gallon, 24 20,000-gallon and 24 10,000-gallon collapsible fuel tanks; 10 miles of assault hose line; and 10 5,000-gallon tankers. The company can store 1.2 million gallons of fuel using FSSPs and can push fuel through assault hose line. The company can also provide limited gas station (retail) support using the 10 5,000-gallon tankers.

The 172d Preventive Medicine Detachment (SH) is the newest of the seven subordinate units. The detachment arrived at the 260th Quartermaster Battalion (PS) from Fort Ord, CA, in May 1993. The detachment inspects food preparation, water trailers and latrines. The unit ensures proper insecticide use at landfills, and provides rodent and insect control.

The 416th Transportation Company (Petroleum) provides transportation for moving bulk fuel by motor transport. The company is equipped with 60 7,500-gallon tankers. The company can haul 450,000 gallons of fuel in a single lift.

Peacetime Mission

The 260th Quartermaster Battalion (PS) provides ammunition, bulk petroleum, transportation and preventive medicine support. Support is provided to 24th Infantry Division (Mechanized), 1st Battalion, 75th (1/75th) Ranger Regiment, and Fort Stewart/HAAF installations. The secondary mission provides personnel, equipment and material to 24th Infantry Division and 1/75th Ranger Regiment. This support assists in the deployment of the units from home station.

HHD provides command and control, administrative, technical and operational supervision over assigned and attached petroleum supply and transportation (petroleum) companies. HHD also maintains and manages Sabre Hall (strategic planning and holding facility for combat operations deployments). The unit also maintains and manages the Ranger Support Element (RSE) and its equipment.

Petroleum Operations

The petroleum operations branch manages the HAAF bulk storage facility (tank farm), flightline hydrant refuel system, retail gas station, and purging facility. The tank farm stores 4.2 million gallons of JP4. The flightline hydrant refuel system can store 1.5 million gallons of JP4. This facility can provide hot and cold refueling to fixed and rotary wing aircraft. Fuel is transferred from the tank farm to the flightline through an underground pipeline. The HAAF retail gas station can store 36,000 gallons of fuel (30,000 of DF2 and 6,000 of motor gasoline (MOGAS)). The purging facility contains 10,000 gallons of water, used with Citrikleen to clean tank vehicles. The petroleum operations branch also manages quality assurance of the battalion's tank vehicles. The 260th Quartermaster Battalion (PS) has 60 7,500-gallon tankers, 11 5,000-gallon tankers, 9 1,200-gallon tank pump units, and 2 6,000-gallon R-11 Air Force tankers. Total storage capacity for tank vehicles is 527,800 gallons.

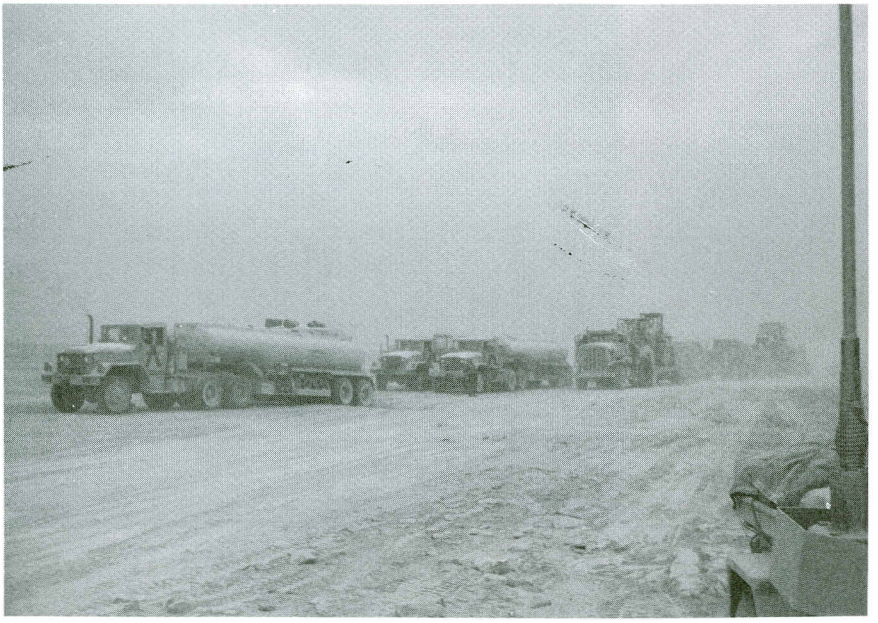
The petroleum laboratory provides quality surveillance testing for 48 customer units, including 187 aircraft and over 6,000 pieces of equipment. The laboratory can conduct all required tests for a full B-2 analysis (most comprehensive test). The laboratory conducts 150 to 200 filter effectiveness tests per week. HHD's laboratory is the only operational mobile petroleum laboratory in the active Army.

The 24th Ordnance Company operates the HAAF ASP. The ASP stores training ammunition for nondivisional units, a portion of 24th Infantry Division (Mechanized) basic load, and 1/75th Ranger Regiment basic load. Storage capability of the HAAF ASP is around 2,375 short tons.

The 51st Transportation Detachment provides movement control support for deploying units from Fort Stewart and HAAF. The detachment provides movement control support to the HAAF Installation Transportation Office (ITO).

The 84th Transportation Company provides daily transportation support to 1/75th Ranger Regiment. The company also provides backup transportation support to 24th Infantry Division (Mechanized) and Fort Stewart.

The 110th Quartermaster Company (PS) operates a tank farm, flightline hydrant refuel system, and retail gas station.



Petroleum convoy moving along Main Supply Route Yankee into Iraq

Unloading a 350-gallons per minute pump to set up a fuel system supply point at Camp Big Tybee, Saudi Arabia

Two views of fuel system supply point at Camp Little Tybee, Saudia Arabia, during *Operation Desert Shield/Storm*

The 172d Preventive Maintenance Detachment (SH) inspects dining facilities, swimming pools, landfills and water trailers. The detachment provides sanitation consultation and field sanitation teams to Fort Stewart and HAAF units.

The 416th Transportation Company (Petroleum) linehauls JP4, DF2 and MOGAS to Fort Stewart and HAAF from Defense Logistics Agency (DLA) storage facilities. The company linehauls DLA fuel for other installations as well. In addition to petroleum linehaul, the unit provides tractor trailer missions for the 1/75th Ranger Regiment.

General George S. Patton said to "Practice those things in peacetime you intend to do in war." That's exactly what the 260th Quartermaster Battalion (PS) does. To ensure the battalion can perform its wartime mission, the S3 seeks garrison missions and deployment exercises that allow this training. Although the battalion is very diversified, I will only discuss its main mission: petroleum supply operations.

The Petroleum Operations Branch conducts a Fuel Handlers Certification Course to stress the importance of job performance and safety. The course is offered to all fuel handlers of Fort Stewart and HAAF. The 40-hour Fuel Handlers Certification Course is divided into three phases:

- Phase I: Eight hours of classroom instruction on general petroleum subjects, fire safety and first aid, tank vehicle operations, quantity and quality control, and tank farm and flightline operations.
- Phase II: 24 hours of on-the-job training (OJT) on tank vehicles, petroleum laboratory awareness, and tank farm and flightline operations.
- Phase III: Written examination and graduation.

Deployment Exercises

Since 1988, the 260th has participated in many training exercises. These exercises included National Training Center rotations and Joint Readiness Training exercises. The battalion received, stored, issued and transported millions of gallons of fuel. These exercises took these Quartermaster soldiers to the California desert; Alberta, Canada; Honduras; Egypt; Fort Bragg, NC; and Fort Jackson, SC. The battalion also participates in other petroleum operations training such as operations on the Inland Petroleum Distribution System at Fort Pickett, VA, for pipeline and terminal operating units. The 240th Quartermaster Battalion at Fort Lee, VA, is a pipeline and terminal unit.

Garrison Missions

The Petroleum Operations Branch coordinates all fuel missions. Daily missions include coordinating fuel shipments to HAAF, maintenance for R-11s and fuel facilities, and ordering laboratory supplies. The section also provides petroleum quality assurance advice to the 24th Infantry Division at Fort Stewart and HAAF.

The 110th Quartermaster Company (PS) garrison mission is second to none. Fort Stewart and HAAF petroleum operations are the largest of any Army unit. The HAAF tank farm must keep on hand a minimum of 900,000 gallons of JP4. This is a portion of the DLA's war stock. The 260th Quartermaster Battalion receives, stores and issues over 10 million gallons of fuel annually. The battalion refuels over 500 Department of Defense and civilian aircraft annually. Good quality fuel is necessary for victory, and this is the mission of HHD's laboratory technicians. These technicians perform over 2,000 quality surveillance tests annually and assist customers with fuel problems.

Movement of fuel is the mission of the 416th Transportation Company (Petroleum). These drivers log hundreds of miles monthly. Daily missions are linehauling DLA fuel from Charleston, SC, to HAAF, and from HAAF to Fort Stewart. The 416th also performs other DLA linehaul missions. During May and June 1993, these soldiers linehauled over 1 million gallons of JP4 from Homestead Air Force Base (AFB), FL, to McDill AFB, FL.

When the Army needs petroleum supply operations, the leaders call upon the 260th Quartermaster Battalion (PS). The battalion is one of three active duty petroleum battalions and the only petroleum supply battalion. The 260th is an XVIII Airborne Corps unit, the only rapidly deployable petroleum battalion in the Army.

The 260th Quartermaster Battalion (PS) participated in *Operation Desert Shield/Storm*, Grenada, and supported *Operation Just Cause.*

During *Operation Desert Shield/Storm* the 260th was designated as a combat support battalion. The configuration of the battalion included eight subordinate units and over 1,200 soldiers. HHD provided command and control and petroleum laboratory support. The 24th and 49th Ordnance Companies provided conventional ammunition support operating the largest ASP in the theater. The 84th Transportation Company provided cargo GS to the 24th Infantry Division and attached units. The 110th Quartermaster Company (PS) provided GS bulk fuel to the 24th Infantry Division and attached units. The 416th Transportation Company provided linehaul DS to the 110th Quartermaster Company. The unit also provided GS to 24th Infantry Division. The 542d Maintenance Company provided DS maintenance to nondivisional units within the 24th Infantry Division area. The 851st Supply and Services Company provided Class I (rations), bakery and laundry services for nondivisional units. The 5th Mobile Army Surgical Hospital (MASH) was prepared to immediately treat combat casualties.

Petroleum Supply

Petroleum supply operations were controlled by the Petroleum

Receiving fuel inside Iraq

Receiving fuel from tankers in Iraq after the war's end

Operations Branch. HHD's mobile laboratory was one of only two operational laboratories in the theater. The laboratory was the furthest deployed and conducted over 600 surveillance tests, including captured fuel. The 110th Quartermaster Company operated three FSSPs (storage capacity of 1.2 million gallons). Jet A1, DF2 and MOGAS were the products stored and used during the war. The 110th Quartermaster Company also operated a retail gas station on the main supply route (MSR) near El Sarra. This gas station refueled U.S. vehicles traveling through the 24th Infantry Division area. The gas station consisted of three 5,000-gallon tankers (two DF2 and one MOGAS).

60,000 miles linehauling fuel from Dhahran and tactical petroleum terminals (TPTs) to the 110th Quartermaster Company. The 416th Transportation Company linehauled over 16 million gallons of fuel during the war.

The Petroleum Operations Branch anticipated a fast battle. Therefore, petroleum operations had to be planned accordingly. Although higher headquarters established Forward Operating Bases (FOBs), the 260th had to plan on refueling the 24th Infantry Division rapidly. To avoid a repeat of the historic Red Ball Express, the 260th Quartermaster Battalion started planning in December.

Planning was conducted by the Petroleum Operations Branch, 110th Quartermaster Company, and the 416th Transportation Company. The team came up with two courses of action (COA). COA 1: "leapfrog" the modified FSSPs (200,000-gallon systems using four 50,000-gallon fuel tanks). Upon arrival at each logistics base, the 416th Transportation Company would return to the previous location and transport that fuel forward. The 110th Quartermaster Company would then leapfrog that modified FSSP forward to the next FOB. COA 2: 416th Transportation Company would issue fuel directly to the combatants' heavy expanded mobile tactical trucks (HEMTTs). After a platoon (20,000-gallon tankers) issued its fuel, the platoon returned to Logistics Base C TPT (Saudi Arabia) to refill. To ensure quality fuel was issued, some 84th Transportation Company cargo trucks were mounted with one each 350-gallons per minute (GPM) pump and filter/separator. Upon arrival at the HEMTTs' location, the fuel would travel from the 416th Transportation Company tankers through the mounted 350-GPM pump and filter/separator into awaiting HEMTTs.

At 1500 hours, 24 Feb 91, the 24th Infantry Division combat team thundered across Phase Line OPUS. Destination: the Euphrates River Valley. In four days, the 24th Infantry Division had conducted what one U.S. officer called "the greatest cavalry charge in history." It had charged all the way around Iraq's army, "almost 250 miles from the barren Saudi Arabian border to the gates of Basrah —farther and with more firepower than General George S. Patton's entire 3d Army had hauled across France." This was possible because of the 260th Quartermaster Battalion. The battalion crossed the Iraq border with COA 2 to sustain the fight. These Logistics Warriors entered Iraq with 340,000 gallons of fuel, 35 combat-configured loads of ammunition, and a MASH unit ready if needed. COA 2 was put into action due to the rapid pace of 24th Infantry Division. Planning paid off; the division achieved its mission.

Operation Just Cause

During the deployment and return of 75th Ranger Regiment from *Operation Just Cause*, the 260th Quartermaster Battalion refueled over 60 aircraft and issued over 500,000 gallons of JP4. The battalion deployed a three-soldier logistical advisory team to Panama.

The 110th Quartermaster Company deployed a platoon to Grenada to provide petroleum support to XVIII Airborne Corps units.

The HHD and 110th Quartermaster Company deployed to Somalia. While in Somalia, HHD provided command and control of water, petroleum, transportation and other logistical operations. The laboratory provided quality surveillance testing. The 110th Quartermaster Company conducted water and petroleum operations.

The 416th Transportation Company was scheduled to deploy to Somalia in January 1994. Their mission is linehauling fuel.

Unfortunately, natural disasters happen, but the 260th Quartermaster Battalion is always ready to help. During Hurricanes Hugo and Andrew disaster relief, the battalion provided Class I (rations), bulk POL (petroleum, oils and lubricants), engineer, and warehouse support.

We logisticians must ensure combatants win the fight. The 260th Quartermaster Battalion (PS) is a multifunctional battalion that provides the four commodities needed to win: fuel, ammunition, medical, and transportation support. This battalion has been successful because soldiers train the way they intend to fight. When petroleum supply operations are needed in a hurry, the Army counts on the 260th Quartermaster Battalion (PS).

CPT Melvin T. Whittenburg received a bachelor of science degree in leisure system studies from East Carolina University. He has completed the Quartermaster Officer Basic and Advanced Courses and Airborne School. His previous assignments include Petroleum Supply Platoon Leader and Company Petroleum Operations Officer of the 110th Quartermaster Company (Petroleum Supply), and Petroleum Laboratory Officer and Battalion Petroleum Operations Officer of Headquarters and Headquarters Company, 260th Quartermaster Battalion (Petroleum Supply), Hunter Army Airfield, Georgia. After completion of the Petroleum Officer Course, he will be assigned to the 49th Quartermaster Group at Fort Lee, Virginia.

No More 'Sailboat Fuel'! in WHEELS 93

Chaplain (CPT) Alan K. Lamm

What's involved in preparing for an exercise like WHEELS 93? A lot, according to the operations noncommissioned officer (NCO) for the 362d Quartermaster Battalion of Kinston, NC. The 362d is aligned within the Total Army to the 49th Quartermaster Group (Petroleum).

Planning for the 362d's 25 May-5 June 1993 mission began a year in advance by observing how the exercise was conducted in 1992. However, two visits to the Camp Shelby, MS, site were not enough. For example, the operations NCO realized quite early that having the 362d haul 3 million gallons of jet fuel (JP4) across four states, as the mission statement required, meant a great deal of homework studying state and federal Environmental Protection Agency (EPA) regulations. Also, leadership had to make sure the battalion's subordinate units complied with the EPA rules.

Complex

Dealing with the complex and often contradictory maze of EPA requirements was just one of the challenges in getting the battalion ready. Other issues were technical in nature. For instance, were the military tankers used by the five truck companies assigned to the 362d Quartermaster Battalion compatible with the civilian vendors? In other words, once the trucks pulled up to the various oil terminals, would they even be able to fuel up? On the surface this did not sound like an issue, but while the military trucks have their "plumbing" on the left side, the oil companies were set up to handle civilian vehicles with "plumbing" on the right. Many required a quick disconnect adapter if the civilian and military equipment were to match up.

These were not the only technical difficulties. Before new tankers can haul fuel they must be purged and leak-tested. This process ensures that no leaks, oils and dirt contaminate the new fuel. EPA guidelines require approved sites for this process, but many truck companies were not located near such sites. To complicate matters even more, the operations NCO learned that some vendors required a new safety feature called the Scully system that grounds the vehicle to prevent sparks from setting fires.

The operations NCO was forced back to the drawing board. First, he called each vendor in Mississippi, Louisiana, Georgia and Alabama to request pictures and other information about their respective facilities. Next he contacted the manufacturer of the Scully system to learn more about this new safety feature. All of this work took months, especially because he was dealing with so many different states, manufacturers, vendors and far-flung units.

Real Thing

Finally the technical aspects were worked out, and planning for the actual exercise began. While it is one thing to conduct a paper exercise, it is quite another to carry out the real thing, especially a military exercise the magnitude of WHEELS 93. For example, the 362d was headquartered at Camp Shelby along with two subordinate truck units, the 353d and 786th Transportation Companies. The other three truck companies assigned for WHEELS 93 were positioned in three adjoining states: the 1148th in Macon, GA; the 182d at Barksdale Air Force Base in Louisiana; and the 781st at Fort Rucker, AL.

All units had to receive the mission statement, EPA requirements and other official documents in advance. Many have home headquarters in states such as Minnesota and Michigan. Then leadership had to ensure that each unit took its respective positions for the exercise.

Once operation plans and orders had been issued and various requirements met, WHEELS 93 began in earnest. For almost two weeks, 180 drivers drove up to 20,000 miles delivering 550,000 gallons of jet fuel daily. This fuel was used by U.S. Air Force planes such as the B-52 bomber, T-37 and T-38, F-15 and F-16 fighters to conduct real world missions.

Payoff

When WHEELS 93 ended, the hard work and planning paid off. The 362d and its truck units had driven over 315,000 miles delivering 3,007,000 gallons of fuel. That's more fuel hauled than all the past WHEELS annual training exercises combined. The 362d's Operations NCO MSG Angel Bosch noted: "This type of realistic exercise shows that the Active Component, Army National Guard, and U.S. Army Reserve can work together to meet any mission, anywhere."

How did the soldiers feel about WHEELS 93? As SGT Lauri Vandenberg of the 353d noted: "After hauling only 'sailboat fuel' (air) for most of our training exercises, transporting the real thing was fun!" - a sentiment echoed by other soldiers of the command as well.

Chaplain (CPT) Alan K. Lamm, a graduate of the Chaplain Officer Basic Course, is Chaplain for the 362d Quartermaster Battalion, Kinston, North Carolina. He has master of divinity and master of theology degrees from Duke University, Durham, North Carolina, and is currently working toward a doctorate degree in history from the University of South Carolina at Columbia.

DFSC Supports Year's Biggest Training Exercise

The Defense Fuel Supply Center's Defense Fuel Region-South (DFR-South) supported the largest annual air defense artillery exercise in the U.S. from 22 May to 1 Jun 93, a joint services operation called Roving Sands 93. DFR-South employees provided almost 3 million gallons of fuel for the more than 12,000-person combat exercise in the southwestern desert.

Logistics support bare base operations dotted the parched terrain. Participants watched the skies for Air Force B-1B and B-52 Stratofortress bombers, A-10 Thunderbolts, F-15 Eagle Tactical Fighters, F-111 Tactical Strike Aircraft and Navy F-14 Tomcats, F-18 Hornett Strike Aircraft and A-6 bombers. Army ground forces set up a complex aerial defense network including Hawk, Patriot, Avenger and Stinger missiles. Helicopters were ready for search and rescue operations.

Roving Sands 93 was part of the Department of Defense's recent training initiative to test defense capabilities with joint exercises in the relatively unpopulated desert areas of western Texas and New Mexico. The 10-day joint air defense exercise involved active duty and reserve troops from across the county. Their objective was to test the military's air defense capability in a high-intensity conflict comparable to the Persian Gulf War. The exercise scenario revolved around regional tensions fanned by an oil cartel. The fictional nation of "Dahib" invaded "Sabira," and the U.S. responded by setting up an air defense network to defend Sabira against an air threat. At the same time, troops played out the scenario by computer simulation.

The attacking forces, staging out of Roswell, NM, were allowed to be as innovative as possible to defeat the air defense network of defending forces in El Paso, TX. The situation for combat and logistics support units was a free-play exercise. Roving Sands 93 tested the military's integrated (ground-to-air, air-to-air, and air-to-ground) air defense systems in a realistic environment. Scenarios were designed for each unit to practice its specialty and benefit from battlefield training and to perform exactly as expected to perform in war.

Logistics planning was crucial. DFR-South was responsible for contracting and supplying an initial estimated requirement for five million gallons of jet and diesel fuel.

"We treat this exercise as a significant test of our ability to support a joint venture of this magnitude," said LTC Frank Wright, Quartermaster, then DFR-South Commander. "Our primary concern was covering fuel requirements for this massive exercise with troop activities scattered over 1,400 square miles of desert."

DFR-South had to ensure adequate fuel supplies for 60 Air Force and Navy aircraft flying up to 150 sorties each day of the exercises. The Army also requested fuel for considerable ground vehicle forces. Eliminating one into-plane contract with a civilian contractor at Roswell meant increased practice for the 469th Quartermaster Group reserve units.

Petroleum requirements for Roving Sands 93 were assigned to the 469th Quartermaster Group. The 469th deployed their reserve units in Albuquerque, NM, to handle bulk JP4, JP8 and diesel fuel issue, receipt, storage, quality surveillance and transportation to the services."We definitely kept busy during this exercise," said 469th Commander COL Calvin D. Jaeger. "We were pleased to have DFR-South support staff observe our operation and assist us with contingencies. DFR-South was quick to find solutions to problems and help our reserve battalions learn by doing."

The 469th Quartermaster Group's commander praised Defense Fuel Region-South staff for helping Reserve Component battalions 'learn by doing.'

Concluding with a 36-hour air battle employing the most sophisticated weaponry and aircraft currently used by the U.S., combat forces tested their ability to provide defensive capabilities for defending a high-value target.

"For the petroleum community," said LTC Wright, "the exercise pointed out the need for continuing joint petroleum operations. DFSC, contract suppliers and carriers displayed this clearly. It worked perfectly."—**Marilyn A. Miller, Public Affairs Officer, Defense Fuel Supply Center, Alexandria, Virginia.**

Fueling the Forces - Roving Sands/POLEX 93

COL Calvin D. Jaeger

The motto of the 469th Quartermaster Group (Petroleum) "Fueling the Forces" was put to the test in Exercise Roving Sands 93. The group's mission was to provide bulk petroleum support to Army, Marine, Air Force and Navy ground and air forces in this air defense exercise. The resulting bulk petroleum exercise (POLEX) was one of the largest ever conducted in the continental United States. The group and its task force handled over 6.8 million gallons of fuel and traveled over 340,000 accident-free miles.

When the 469th Quartermaster Group was developing a major POLEX for its headquarters, peacetime subordinate units and other bulk petroleum units in the Southwest for FY 93, the needs for Roving Sands 93 became known. A recommendation was made to the 377th Theater Army Area Command (TAACOM), responsible for the combat service support for Roving Sands 93, that the group and its task force provide the bulk petroleum support.

The 469th Quartermaster Group and its subordinate units operated in an area roughly 150 by 350 miles. The area of operation extended from Fort Bliss and Biggs Army Airfield (AAF), TX, on the south to Stallion Station at the extreme northwestern edge of White Sands Missile Range (WSMR), NM, to Roswell, NM, in the east. In addition, group Transportation companies routinely traveled over 200 miles one way to pick up fuel at a refinery outside Lubbock TX, and return to Roswell International Air Center (IAC).

The bulk petroleum and water task organization under the 469th Quartermaster Group consisted of 16 U.S. Army Reserve (USAR) and Army National Guard (ARNG) units from 5 states. Four battalion headquarters and two detachments reported directly to the group. All task force units for the exercise were at less than 100 percent of personnel and equipment authorization.

The following were the task force units:

Unit	Comp	Home Station	Exercise Location
469th QM GP (Petrl)	USAR	Albuquerque, NM	MacGregor RC, NM
372d QM Bn (PS)	USAR	Albuquerque, NM	Roswell IAC, NM
104th QM Co (PS)	USAR	Midland, TX	
2222d TC Co (POL)	ARNG	Tucson, AZ	
942d QM Det (Pet HNS)	USAR	Albuquerque, NM	
383d QM Bn (Pl & Tml Op)	USAR	El Paso, TX	Biggs AAF, TX
900th QM Co (PS)	USAR	El Paso, TX	
348th TC Co (POL)	USAR	Phoenix, AZ	
402d QM Bn (PS)	USAR	Farrell, PA	Oro Grande, NM
475th QM Co (PS)	USAR	Farrell, PA	
281st TC Co (POL)	USAR	Las Cruces, NM	
1120th QM Bn (PS)	ARNG	Tucson, AZ	Stallion Station, NM
2221st QM Co (PS)	ARNG	Tucson, AZ	
221st TC Co (POL)	ARNG	Tucson, AZ	
120th QM Det (WP)	ARNG	Riverton, UT	
809th QM Det (Pet Ops)	USAR	Albuquerque, NM	Roswell IAC, NM
810th QM Det (Pet Ops)	USAR	Albuquerque, NM	Biggs AAF, TX

Legend:

AAF - Army Airfield
AZ - Arizona
ARNG - Army National Guard
Bn - battalion
Co - company
Det - detachment
GP - group
IAC - International Air Center
NM - New Mexico
Ops - operations
PA - Pennsylvania
Pet - petroleum
Petrl - petroleum
Pet HNS - petroleum host nation support
PL & Tml Op - pipeline and terminal operating
POL - petroleum, oils and lubricants
PS - petroleum support
QM - Quartermaster
RC - Reserve Center
TC - Transportation
TX - Texas
USAR - U.S. Army Reserve
UT - Utah
WP - water purification

In addition to the listed U.S. Army Reserve and Army National Guard units were many other organizations that supported the group. The Defense Fuel Region-South (DFR-S) developed the initial estimate of fuel requirements and contracted for the fuel from different sources. During the exercise, DFR-S personnel were on the ground for quality assurance and coordination with the fuel suppliers. Also, Defense Fuel Supply Center (DFSC) facilities and fuel sites at Alamagordo, Roswell and Biggs AAF provided fuel. Critical components of the petroleum support mission were the mobile petroleum laboratories at Biggs AAF and Roswell IAC. Soldiers from the Army Petroleum Center, the U.S. Army Quartermaster Center and School's Petroleum and Water Department and the 49th Quartermaster Group (Petroleum) at Fort Lee, VA, conducted training for personnel assigned to the petroleum laboratories. Finally, the 387th Engineer Company (Pipeline Combat Support) constructed the berms at some fuel system supply points and the 84th Finance Support Center assisted the group's petroleum operations section and headquarters company.

Training Objectives

The 469th Quartermaster Group sought to challenge the group staff and subordinate units in a major real-world petroleum exercise at every level from the individual soldier to the group and battalion battle staffs. The exercise was designed to evaluate the units during the transition from peace to war, mobilization at home station and deployment to the exercise locations and to assess the units' ability to support and sustain the force.

For this exercise the 469th Quartermaster Group assumed additional responsibilities normally handled by a Material Management Center (MMC) and Joint Petroleum Office (JPO). Requirements from the bulk fuel customers were forwarded through the two petroleum detachments to the group. The group's petroleum operations section set the priorities and allocations for petroleum support. In addition, the group coordinated with the exercise fuel suppliers (DFSC fuel points, refineries) for fuel pickup from their respective sources.

Petroleum Accountability

The 469th Quartermaster Group ensured accountability of all wholesale bulk petroleum during the exercise and worked with the 321st MMC to reconcile the input from the bulk and retail petroleum operations. The group also monitored fuel consumption at the unit level for costing purposes. This made sure that no command exceeded the funding level indicated on a purchase request. The daily petroleum situation report gave the activities and status of each bulk Class III (petroleum, oils and lubricants (POL)) point and the three-day fuel forecast. The group's unit used Army accountability procedures and forms, except for Department of Defense (DOD) forms for the fuel pickup and delivery.

The fuel system supply points (FSSPs) were located to best support the bulk petroleum customers (BPCs). The exercise area of operations was divided into four sections. A battalion generally supported the maneuver forces or air operations within each section. Each battalion had an FSSP or bulk fuel point to support the ground forces. In addition, the 383d Quartermaster Battalion established an FSSP at Biggs AAF to support the "blue" air forces, and the 372d Quartermaster Battalion operated a fixed fuel site at Roswell IAC to support the "red" air forces. The 1120th Quartermaster Battalion also established a helicopter refuel point at Stallion Station, run by the 2221st Quartermaster Company. At the beginning of the exercise, the 900th Quartermaster Company at Biggs AAF operated a refuel on the move (ROM) site for the maneuver force's wheeled vehicles that needed fuel before deploying to field locations.

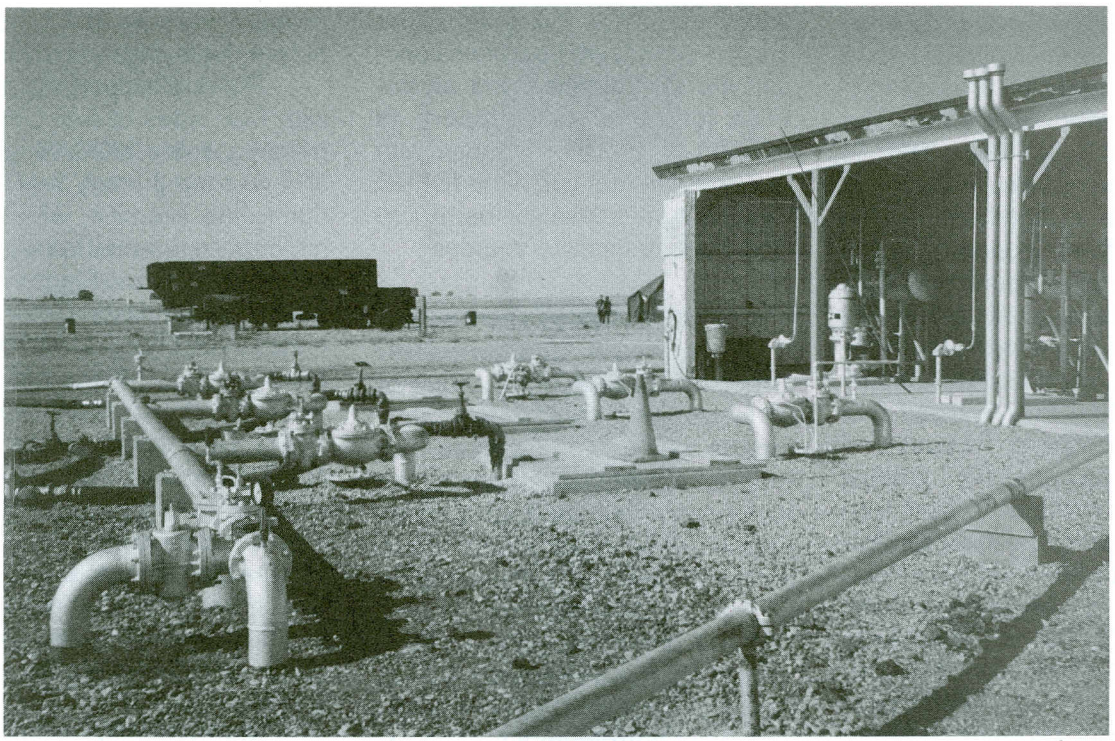
Bulk fuel support was provided with four types of fuel (JP4, JP8, military gasoline (MOGAS) and DF2). JP4 was the primary fuel handled during the exercise, with about 3 million gallons issued to the air forces at Roswell IAC and Biggs AAF. The 900th Quartermaster Company operated a 250,000- gallon FSSP along the flight line at Biggs AAF to service the Air Force fuel tankers. The 104th Quartermaster Company operated a fixed fuel site using 8 separate underground storage tanks with a total capacity of 250,000 gallons. In addition, the Air Force established a 200,000-gallon FSSP for refueling the B-1B bombers. The group provided the JP4 for both systems.

Nearly 600,000 gallons of JP8 were consumed during this exercise. JP8 was available at 4 bulk fuel sites with a total capacity of over 350,000 gallons. Most JP8 was drawn from the fuel suppliers early in the exercise, so JP8 was available for any petroleum training missions.

MOGAS

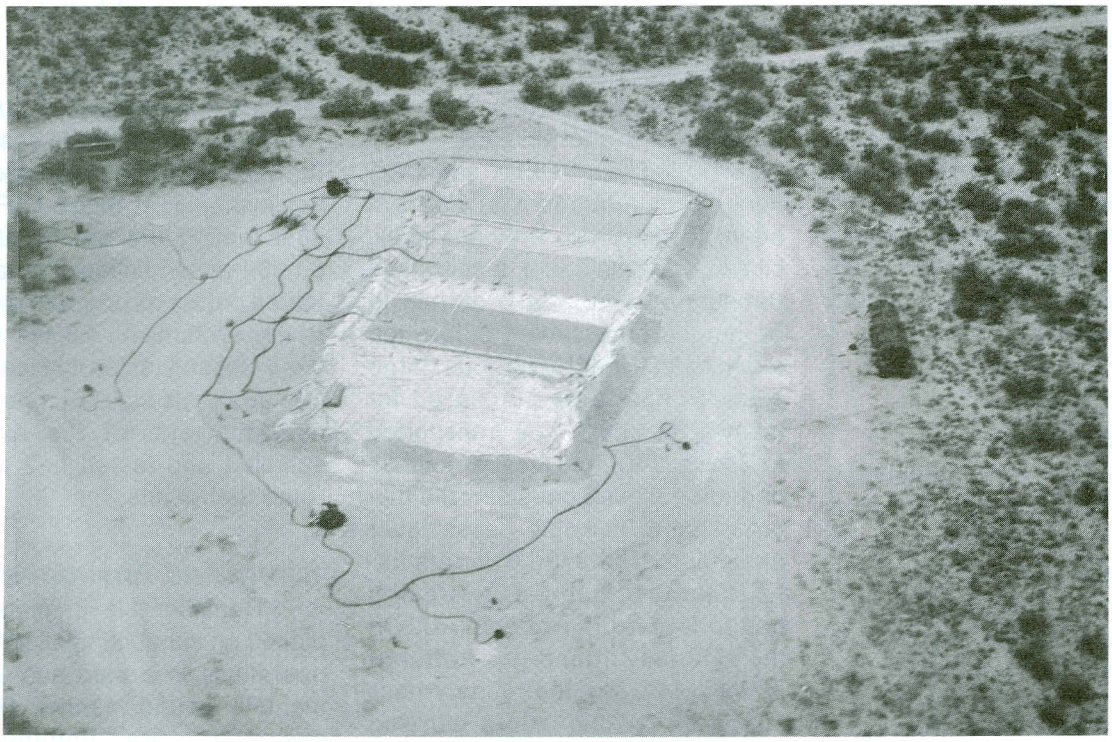
About 51,000 gallons of MOGAS and 51,000 gallons of DF2 were consumed. This was much more than was predicted before the exercise. There were two reasons: the continued use of DF2 in some equipment such as generators and reefers that could have been switched to JP8 and the heavy use of MOGAS by rental cars and other vehicles that needed unleaded fuel. The DF2 and MOGAS were stored in semi-trailers, not in collapsible tanks. Customers picking up fuel at the FSSPs had to have tanks that held at least 600 gallons.

This exercise had four primary fuel suppliers. JP4 was obtained from a refinery in Abernathy, TX, (just north of Lubbock), from the DFSC fuel point at Alamagordo, NM, and from the Navajo pipeline terminal south of Roswell IAC. All JP8 and MOGAS came from the fuel

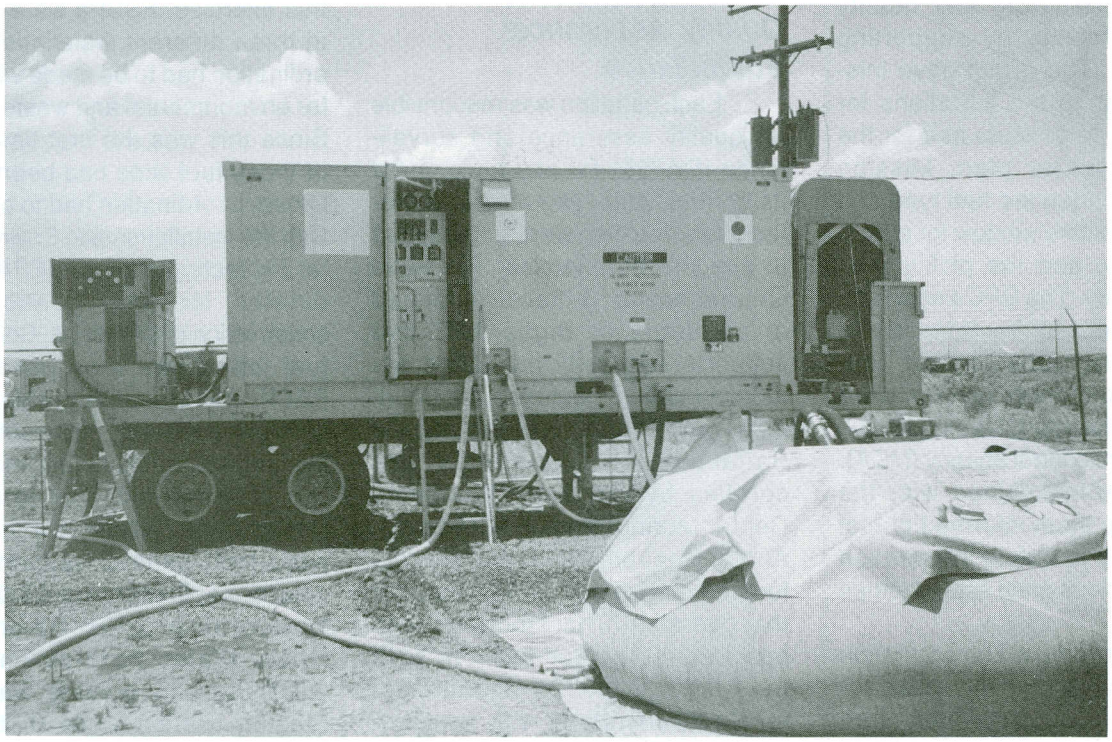


Fixed fuel site at Roswell International Air Center, New Mexico, with the mobile petroleum laboratory in the background

Delivering JP4 to support the "Red" forces at Roswell International Air Center



The fuel system supply point at Oro Grande, New Mexico



The 3,000-gallons per hour Reverse Osmosis Water Purification Unit at Stallion Station, New Mexico

point at Biggs AAF. DF2 came from a refinery in El Paso, TX. DFR-S contracted for all of the fuel and helped to establish guidelines and coordinated plans for obtaining fuel from the refineries and DFSC terminals. This was particularly critical because all of the fuel supply sites also provided fuel to other DOD customers and had limited tanker loading capability.

Bulk Petroleum Distribution Plan

A bulk petroleum distribution plan was developed specifically for this exercise. The BPCs such as the maneuver brigades, airfields and area support groups provided their bulk fuel requirements as part of a three-day fuel forecast through the two petroleum detachments to the group's petroleum operations section. The petroleum detachments not only served as a link to the BPCs but also provided liaison with the DFSC fuel points and refineries as well as coordinating any quality assurance testing by supporting installations. The group gave mission taskings to the battalions for the next day to execute and for the next two days to plan. Mission taskings provided the fuel type and quantity, date/time window for pickup and delivery, and the pickup and delivery points. The BPCs assumed that their fuel requirements would be met unless told otherwise. Status and information reports were provided to the TAACOM, MMC and the movement control agency (MCA). Contact was maintained with the MCA to keep them informed of fuel missions and to obtain information about the various main supply routes (MSRs).

Four petroleum Transportation companies supported this exercise. Three of the companies had 5,000-gallon semitrailers and 1 had 7,500-gallon semitrailers. Because the exercise was about 3 1/2 weeks long, the units were incremented to meet expected exercise requirements. At the peak, a total of 178 semitrailers were available with a total maximum lift capability of just under 1 million gallons. Most of these assets were used to move JP4 (112 semitrailers), and the remainder was for JP8, DF2 and MOGAS.

During this POLEX some actions were required that had not been necessary in previous exercises. Because most semitrailers transported JP4, nearly all had to be purged and readied before the exercise started. Hazardous cargo placards had to be purchased for many of the trucks. Fuel transported to Roswell IAC from the fuel sources had to be moved considerable distances and, in some cases, over mountains. The 372d Quartermaster Battalion supported drivers who had to layover in Roswell IAC. On the 440-mile round-trip between Roswell IAC and the refinery near Lubbock, TX, the trucks carrying the JP4 were refueled by the unit's refuel tanker which would go part of the way with the convoy so that the trucks could get back.

Quality Assurance/ Surveillance

Each battalion was responsible for quality assurance and surveillance (QA/QS) for any fuels under its control. Also, two mobile petroleum laboratories were established to support the exercise. The 383d Quartermaster Battalion operated a laboratory at Biggs AAF that supported not only the Biggs airfield operations, but also the 383d, 402d and 1120th Quartermaster Battalions. This laboratory was certified by the Army Petroleum Center during Roving Sands 93. Another petroleum laboratory was located at Roswell IAC to support that operation. That laboratory was operated by personnel from both the 1120th and 372d Quartermaster Battalions along with noncommissioned officers from the U.S. Army Quartermaster Center and School and 49th Quartermaster Group. The DFR-S quality manager and two quality control specialists provided support, including considerable technical assistance and training to the group and battalions. They also helped resolve any QA/QS problems. Fuel quality for the air forces was very important, and extra measures were taken to ensure that the fuel was within specifications. For example, at Biggs AAF FSSP, all incoming JP4 was isolated in a 50,000-gallon collapsible tank and tested before mixing with other fuel in the system. All FSSPs recirculated fuel and tested it at least daily. The group, as the senior petroleum headquarters for the exercise, sampled and tested fuel at some retail fuel points.

Safety and Environment

Considerable emphasis was placed on conducting all petroleum operations in a safe and environmentally sound manner. Risk assessment, fire fighting, spill contingency and accident plans were prepared for each fuel site. All group members actively worked to have the safest environment possible. For this exercise, FSSPs were located at three different installations. Coordination had to be made with each for environmental and waste issues. Since this was the first time some of these fuel sites had been established, coordination had to be made with the installation/site Environmental Protection Agency (EPA) coordinator for the location and construction of the berms. Collapsible fuel tank liners were used. Each FSSP had a standby empty tank capable of holding the contents of the largest collapsible tank.

The 120th Quartermaster Detachment (Water Purification) performed general support water operations. Soldiers used 3,000-gallons per hour (GPH) Reverse Osmosis Water Purification Units (ROWPUs) to provide water for Stallion Station while that water system was being repaired. The water production capacity of the 120th Quartermaster Detachment greatly exceeded the daily requirements. Water at all other field locations was obtained from fixed sources of supply.

Here are some brief lessons learned. These are not in any particular order.

The concept of a single fuel type on the battlefield was not followed in this exercise. The preparation of the semitrailers for movement of the JP4 before the exercise required considerable effort on the part of the units' maintenance support facilities. Since JP4 is typically not a fuel hauled by many units, this may continue to be a problem if JP4 is required in future exercises. Using JP8 would reduce the preparation requirements.

Multiple fuel types make petroleum operations and transport more difficult and also significantly stress available resources. Even if JP4 is necessary for some aircraft, every effort should be made to use JP8 in all other military vehicles or equipment. The need for MOGAS may continue if commercial vehicles require this fuel.

The 2222d Transportation Company had the M915A2 trucks and 7,500-gallon semitrailers and was the primary transporter of fuel to Roswell IAC. The increased lift capability provided by this unit was extremely important to the mission's overall success. A 1-day, 400-mile, long-haul was possible with this type of unit. The 2222d clearly demonstrated what a valuable role the unit can play when moving large quantities of fuel over developed highways.

Getting the fixed tanks at Roswell IAC ready to accept fuel required considerable effort and coordination. The 104th Quartermaster Company had to receive special training on operations of the facility. There were also some problems when drawing down the fuel in the tanks at the end of the exercise (ENDEX). For future exercises, constructing berms and operating an FSSP would be best.

As ENDEX approached, the drawing down of fuel was intensively managed. For JP4, the Air Force had another exercise at Roswell IAC after Roving Sands/POLEX 93. We were able to transfer the JP4 to the Air Force collapsible tanks. The real headaches for fuel drawdown were with JP8, DF2 and MOGAS. The Biggs AFF fuel site would not accept leftover exercise fuel. This resulted in the group having to manage the fuel status in very small quantities to get to zero balance at ENDEX. Arrangements for future exercises should allow for turn-in procedures at DFSC facilities.

This was the first exercise where two newly activated units, the 809th and 810th Quartermaster Detachments (Petroleum Operations), were used. They served as an extension of the group's petroleum operations section and as a vital link between the group and remote locations. These detachments were invaluable in establishing and maintaining contact with bulk petroleum customers and fuel suppliers. They should be used in any operations with multiple major petroleum customers and/or geographically remote locations.

Fuel Forecasting HEMTT

As has been the case in other exercises, fuel forecasting was not done well. Although customers were responsible for estimating their own fuel requirements, the numbers received were generally not accurate if received at all. Initially, the fuel forecasts from both airfields were generally too high because they were based on optimal flying conditions and number of sorties. Roswell IAC was a multiservice airfield, and this caused some problems with accurate forecasts before and at the beginning of the exercise. A single point of contact was finally established for each airfield. This person, an experienced Air Force fuels logistician, consolidated the requirements of the various air components operating out of the airfield. After this, fuel forecasting for the airfields became much smoother.

The fuel forecasts for ground fuels only improved for a few bulk petroleum customers. Most of the bulk ground fuel users continued to arrive at the FSSPs wanting fuel without forecasting it. The need for good fuel forecasting must be stressed to avoid these problems in the future and better use resources. Airfields, especially those with multiservice components, should designate a single person to forecast fuel requirements for the airfield.

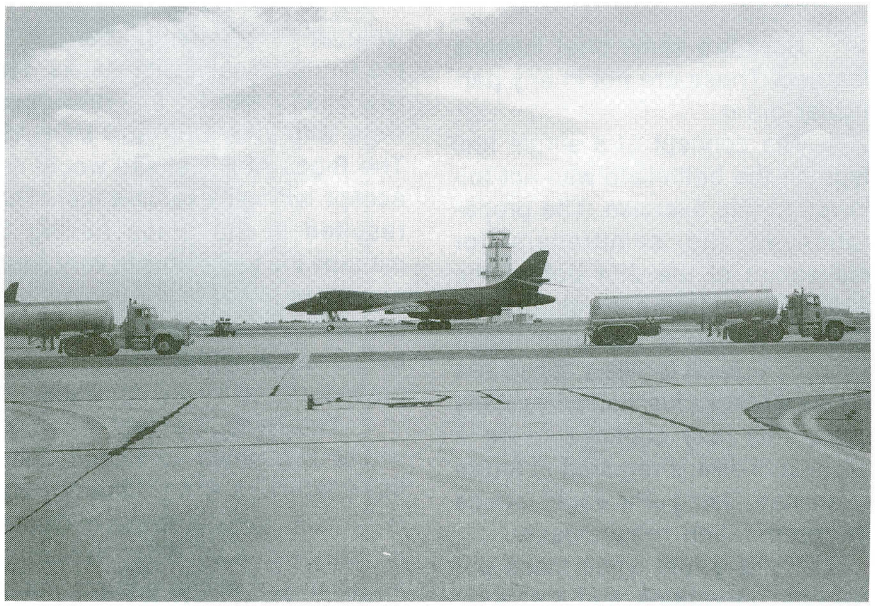
This exercise had no major equipment problems. A number of wheel seals on the M915A2 trucks and filters in some filter/separators, which had been stored at an equipment concentration site, had to be replaced. One of the Transportation companies had the older M931 trucks that required extensive unit maintenance to keep them operational. These trucks also lacked the power to pull heavy loads through the mountain passes. Finally, as a result of the group's policy not to "top load" any fuel (except for tank and pump units), it was discovered that the Quartermaster companies operating the FSSPs did not have D-1 couplers for loading heavy expanded mobile tactical trucks (HEMTTs). Couplings were found for this exercise, but this requirement needs to be addressed for future operations. Quartermaster companies should be provided equipment to refuel any possible vehicle which might come to their FSSPs.

The mobile petroleum laboratories played a critical role in the QA/QS programs within the battalions and group. The laboratory personnel for this exercise did an excellent job. However, there was a definite shortage of qualified petroleum laboratory personnel and the problem needs fixing. In an exercise such as this, considerable use must be made of the petroleum laboratory. The personnel worked long hours and used up the chemicals on hand. Fortunately, we were able to purchase chemicals to continue operations, but this too needs to be addressed for future exercises.

Although the level of activity for this exercise was much greater than what many of the units had experienced in previous exercises, the level of activity was not uniform in all areas and for all units. The battalions and Quartermaster companies located in Stallion Station and Oro Grande did not have the activity that we had hoped before the start of the exercise. The intent was to use JP8 as the fuel for petroleum training missions to be conducted concurrently with the Roving Sands support. Only about 400,000 gallons of fuel were moved in petroleum training missions beyond Roving Sands requirements. This was an order of magnitude less than planned. If JP8 could become the predominate fuel for the exercise, then support to Roving Sands and additional petroleum training missions could be conducted.

Roving Sands 92 used the 383d Quartermaster Battalion (Pipeline and Terminal Operating) and one Quartermaster and one Transportation company to support the ground maneuver forces. However, the air forces were provided fuel through existing inter-plane contracts at the airfields at a cost of $1.09 per gallon. For Roving Sands 93, the group assumed responsibility for providing fuel not only to the ground maneuver forces but also to the "red" air forces located at Roswell IAC and the "blue" air forces at Biggs AAF. The cost of the fuel was $0.70 per gallon, providing a savings of $0.39 per gallon from last year's fuel costs. Besides the excellent training opportunities, Roving Sands/POLEX 93 saved DOD over $1 million dollars in fuel expenses.

Using a major petroleum task force as part of the combat service support to Roving Sands was a success not only for Roving Sands but also for the members of the 469th Quartermaster Group task force. The exercise challenged the participants and exposed them to new training situations. Although many units under the 469th Quartermaster Group participated in *Operation Desert Storm*, for most this was their largest petroleum operation ever. This exercise had many "firsts." It was the first time the group had worked so closely in a real world exercise with DFSC and drawn fuel from its facilities. The petroleum operations at the airfields were also the first for some units. Finally, this was the first time that most of the U.S. Army Reserve and Army National Guard bulk petroleum units located in the southwestern United States had worked together.



Petroleum trucks passing by the flight line of B-1B bombers on the way to refuel the Air Force fuel site at Roswell International Air Center

This exercise could easily be expanded to include bulk water operations or perhaps the deployment of the Inland Petroleum Distribution System (IPDS). In today's world of reduced resources, the Army should take every opportunity to maximize the benefit of any exercise. Future Roving Sands can provide major training opportunities for bulk petroleum and water units. Since the 469th Quartermaster Group is scheduled to be inactivated in September 1994, it is hoped that someone else will take the challenge to continue petroleum exercises of this type.

The success of this exercise would not have been possible without the dedication and hard work of the 469th Quartermaster Group executive officer and his staff. The contributions of the organizations mentioned in this article, particularly DFR-S, along with the professionalism and skill of the U.S. Army Reserve, Army National Guard and multiservice Active Component participants, clearly demonstrated that the Total Force concept works for bulk petroleum and water operations.

COL Calvin D. Jaeger is currently the Commander of the 469th Quartermaster Group (Petroleum), Albuquerque, New Mexico. Previous assignments include Commander, 372d Quartermaster Battalion (Petroleum Supply) and staff positions in the 156th Area Support Group, 383d Quartermaster Battalion (Pipeline and Terminal Operating), the 3d Armored Division, the 101st Airborne Division, 2d Armored Division and the 3d Armored Cavalry Regiment. COL Jaeger is a graduate of the Quartermaster Advanced Course, the Petroleum Management Course, the Army War College Defense Strategy Course, the National Defense University National Security Management Course and the Army War College. He has completed six courses from the Army Logistics Management College, including the Associate Logistics Management Course. He is a member of the Army's Logistics Development Program. He has a doctorate degree in physical chemistry from the University of Texas at Austin and is a Project Manager at Sandia National Laboratories, Albuquerque, New Mexico.

Quartermaster Hall of Fame Inducts Five

The five new members inducted into the Quartermaster Hall of Fame in 1993 bring the total to 28 retired military (former Active and Reserve Components) and retired civilians so honored. LTG Kenneth E. Lewi, retired; Wayne A. Smith, deceased; COL Joseph J. Volpe, retired; CW4 Stephen N. Chobanian, retired; and SGM Roy L. Morrow, deceased, were chosen by a selection board for significant contributions to the Corps.

The induction ceremony was held 22 Oct 93 at Fort Lee, VA. The day's events included the Second Annual Regimental Ball and a dedication ceremony opening the Quartermaster Museum's new 100-seat Littlejohn Auditorium. (An article titled "Major General Robert M. Littlejohn — Chief Quartermaster in the ETO" by Dr. Steven E. Anders, Quartermaster Corps Historian, appeared in the Autumn 1993 *Quartermaster Professional Bulletin.*)

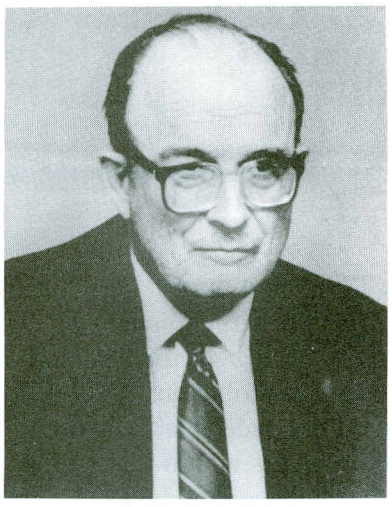
Anyone at anytime can submit nominations. Packets should include a 1 to 2 page biography, a narrative of contributions, an 8-inch x 10-inch photo (preferably black and white), letters of support and award citations. Nominations are cut off 1 December each year for any incomplete nominations submitted. This allows for research time to complete the nomination packets. However, exceptions will be made for complete packets submitted not later than 1 March each year. Any incomplete packets received between 1 December and 1 March, or complete packets received after 1 March, will be considered during the following year's selection board. The 1994 selection board is currently slated for 23 Mar 94. Send nomination packets to Office of the Quartermaster General, ATTN: ATSM-QMG-O (Regimental Officer), Fort Lee, VA 23801-5000. For further information, telephone DSN 687-4333/4339 or Commercial (804) 734-4333/4339.

LTG Kenneth E. Lewi

LTG Kenneth E. Lewi was born on August 1, 1930 in Oklahoma City, OK. He was commissioned a second lieutenant in the Quartermaster Corps after completion of Reserve Officer Training at Texas A&M University. His civilian education includes a master of business administration degree from the University of Alabama.

General Lewi's most recent assignment before retirement was as Commander of the 21st Theater Army Area Command (TAACOM) in Kaiserslautern, Germany. The 21st TAACOM was the Army's largest forward-deployed logistics command, responsible for over 33,000 personnel and budgeted for more than $1 billion per year. General Lewi's other commands included 46th Support Group, Fort Bragg, NC; U.S. Army Troop Support Command, St. Louis, MO; 3d Support Command, Frankfurt, Germany; 23d Supply and Transportation Battalion, Vietnam; and Support Battalion, 196th Infantry Brigade, Vietnam.

General Lewi's awards and decorations include the Distinguished Service Medal (with Oak Leaf Cluster), the Legion of Merit (with Oak Leaf Cluster), the Bronze Star Medal, the Meritorious Service Medal (with Oak Leaf Cluster), the Air Medal, the Joint Service Commendation Medal, and the Army Commendation Medal. He also earned the Parachutist Badge, the Rigger Badge, and the Army General Staff Badge.



Wayne A. Smith
1922-1993

The late Wayne A. Smith was born on July 1, 1922 in Fort Collins, CO. His career spanned 45 years of service, both in the military and as a civil service employee. Throughout his career, Smith earned himself the reputation as "Mr. Supply" to the Quartermaster Corps.

His military career began in World War II. He served in Corregidor, was captured by Japanese Army in 1942 and remained a prisoner of war (POW) until 1945. He was honorably discharged from the Army in 1946. His military decorations include the Purple Heart and Bronze Star.

His civil service career began in 1951 at the Department of the Army, Office of the Deputy Chief of Staff for Logistics (DCSLOG) where he remained until his retirement. Smith worked a variety of positions for the DCSLOG, including Statistical Analyst, General Supply Officer, Chief of the Supply Policy Branch, Deputy Chief of the Supply Division, Technical Advisor to Supply and Maintenance Division, and Deputy Director of Supply. He also served as a General Supply Officer, U.S. Army G4, Alaska, from 1954-1957. He was a Charter Member of the Senior Executive Service (SES) and retired at SES Level 4.

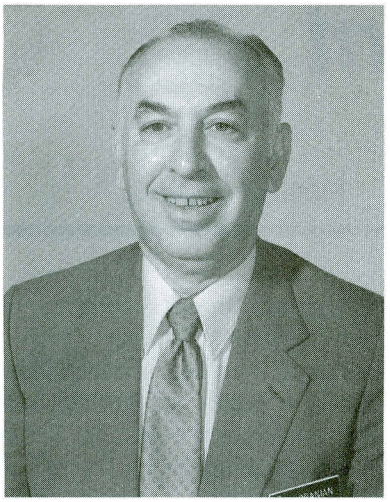
He earned his reputation for excellence as the principal proponent leader in every major supply system improvement in the Army. He was the key staff designer, developer, planner and initiator for the Direct Support System, the Air Line of Communications, the Logistics Intelligence File, the Automation of Retail Level of Supply, and the Army Field Stock Control System. He died on July 30, 1993.

COL Joseph J. Volpe

COL Joseph J. Volpe was born on September 17, 1930 in Philadelphia, PA. He was commissioned as a second lieutenant upon completion of studies at the United States Military Academy in 1953. His education also includes a master's degree in petroleum engineering from the University of Pittsburgh and a master's degree in management from the Navy Post Graduate School. COL Volpe's significant awards include the Legion of Merit (with Oak Leaf Cluster), Bronze Star Medal, Meritorious Service Medal, Joint Service Commendation Medal, Army Commendation Medal, and Army Achievement Medal.

COL Volpe's numerous contributions to the Quartermaster Corps earned him the reputation as "the Godfather of POL." While serving as the Special Assistant for Petroleum to the Assistant Deputy Chief of Staff for Logistics (Supply and Maintenance) from 1969 through 1972, COL Volpe was the sole Department of the Army contact for all petroleum systems and projects. With his understanding of petroleum and his experience in Vietnam, COL Volpe developed and implemented many programs which improved military petroleum logistics worldwide.

COL Volpe's accomplishments also included critical guidance in the planning of the Trans-Korea Pipeline. He made key design improvements in the original pipeline plans, reviewed and improved system training programs for pipeline operations, and negotiated contracts with U.S. and Korea commercial oil companies to supply fuel to the U.S. Armed Forces through the pipeline. COL Volpe assumed command of the Petroleum Distribution System-Korea in 1972 and provided the key leadership that ensured the success of the operation.

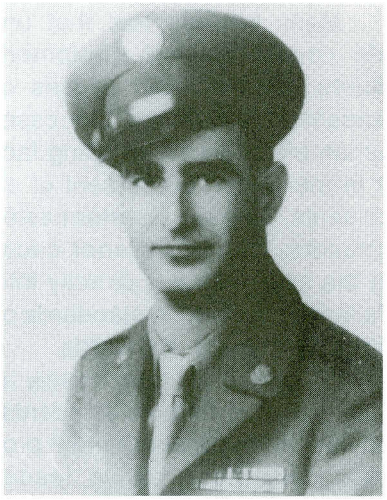


CW4 Stephen N. Chobanian

CW4 Stephen N. Chobanian was born on August 22, 1933 in New Kensington, PA. He enlisted in the U.S. Army in 1953 and was commissioned as a warrant officer in 1961. He earned a reputation as one of the premiere trainers of Quartermasters worldwide during his more than 20 years of active duty service. He continued his role as a principal educator and leader to the Quartermaster Corps with his numerous accomplishments as a civil servant.

Chobanian was a major contributor to the development and adoption of significant improvements to the Army supply system, promoting efficiency, enhancing troop support and standardizing supply accountability. He has been recognized as a Total Army supply management educator, training thousands of supply technicians and managers throughout the U.S. Army and the international military community. His excellence has earned him an unprecedented four awards of "Quartermaster School Distinguished Instructor."

With education and professional development holding the key to future logistics, he is considered a mentor for a whole generation of Quartermaster soldiers. In recognition of his decades of service and devotion to the Corps, he was appointed the first Honorary Warrant Officer of the Quartermaster Corps, a position he has held since 1989.



SGM Roy L. Morrow
1919-1982

SGM Roy L. Morrow was born on September 22, 1919 in Bowie, TX. He enlisted in the U.S. Army on September 8, 1940, and served in the Pacific Theater of Operations during World War II. He was captured by Japanese forces in 1942 and was a prisoner of war (POW) until 1945. His many decorations include the American Defense Service Medal with Foreign Service Clasp, National Defense Service Medal (with Oak Leaf Cluster), World War II Victory Medal, Asiatic-Pacific Campaign Medal (with Bronze Star), American Campaign Medal, Prisoner of War Medal, and Army Commendation Medal.

During his time as a Japanese POW, SGM Morrow showed his leadership abilities. He was often called upon to serve as a leader in the absence of officers in the POW camp and always served with valor. Both during the war and throughout the remainder of his career, SGM Morrow's actions were characterized by his professional knowledge, superior performance, and dedication to duty. He died on December 24, 1982.

Quartermaster Accident Downturn

Michael L. Davis

The Quartermaster Corps, as the rest of the U.S. Army, is experiencing a steady downturn in the number of accidents reported each year. Figure 1 shows a decline in reported Quartermaster accidents from 1,134 accidents in FY 85 to 338 accidents in FY 93.

Although the total number of Quartermaster accidents is going down, accident types continue to stay the same along with the number of deaths caused by those same accident types. Figure 2 displays the 338 Quartermaster accidents reported in FY 93 by type and percent of total accidents. Figure 3 lists all fatal and permanently disabling injuries for FY 93.

Accidents Similar

Quartermaster soldiers continue to have the similar accidents in the same five areas: combat soldiering, Army motor vehicle (AMV), privately owned vehicle (POV), sports, and materials handling. For FY 90 through FY 93, Figure 4 breaks down how those five areas averaged 77 percent of all Quartermaster Corps accidents for the past four fiscal years. These five accident categories also accounted for 85 to 90 percent of all fatalities during the same time frame.

These are the top three shortcomings that have led to the same types of accidents over and over:

- Inattention to detail,
- Individuals not following established standards, and
- Leaders not enforcing standards.

Combat soldiering accidents, the largest category of Quartermaster accidents, include those activities inherent in common soldiering tasks required to complete unit mission requirements. The top three combat soldiering accidents for the past four fiscal years were parachuting - 21 percent; human locomotion (inattention while walking/running in tactical areas or improper dismounting from vehicles)-19 percent; and physical training-14 percent.

The top four POV accidents resulting in injuries or fatalities were speeding-33 percent; accidents caused by the driver of other vehicle-23 percent; fatigue-15 percent; and failure to yield the right of way-15 percent. POV accidents were the number one killer of Quartermaster personnel. Accidents involving driving under the influence of alcohol were not among the leading POV accidents. Accidents involving Army motor vehicles (Army-owned vehicles/equipment) had human error, failure to follow standards, and lack of leader enforcement of standards as the main causes of these accidents. Driving too fast for road conditions accounted for 31 percent of AMV accidents. Accidents caused by the driver of the other vehicle amounted to 13 percent. Following too closely during convoy operations accounted for 11 percent of AMV accidents. Simple human error was the cause for these convoy accidents. Finally, misjudging clearance preceded 8 percent of the AMV accidents. These accidents were the direct result of personnel not using ground guides when needed, or ground guide personnel were not trained to standard. AMV accidents accounted for the second largest category of Quartermaster fatalities.

Sport injuries included individual and team, organized and unorganized sport activities. Team sports accounted for 75 percent of all Quartermaster sports injuries. The top two team sports for injuries are basketball (leaders need to ensure that combat rules do not prevail during these games), and touch/flag football (leaders need to ensure that supervision and a referee are provided). These two team sports accounted for over 55 percent of all Quartermaster sports injuries.

Soldier Opinion

Many soldiers feel that unsafe conditions and equipment failures are the main causes of accidents. This is not the case. Human error is a contributing factor in more than 80 percent of all accidents. In many Quartermaster accidents, the human error causing the accidents ties directly into a failure to perform to standards or failure to enforce standards.

Leaders must look closely at each operation, enforce standards, and use the risk management process. Remember, active leader involvement from all levels and a team effort by everyone are essential for an effective safety program.

Michael L. Davis, Quartermaster Branch Safety Office, U.S. Army Quartermaster Center and School, Fort Lee, Virginia.

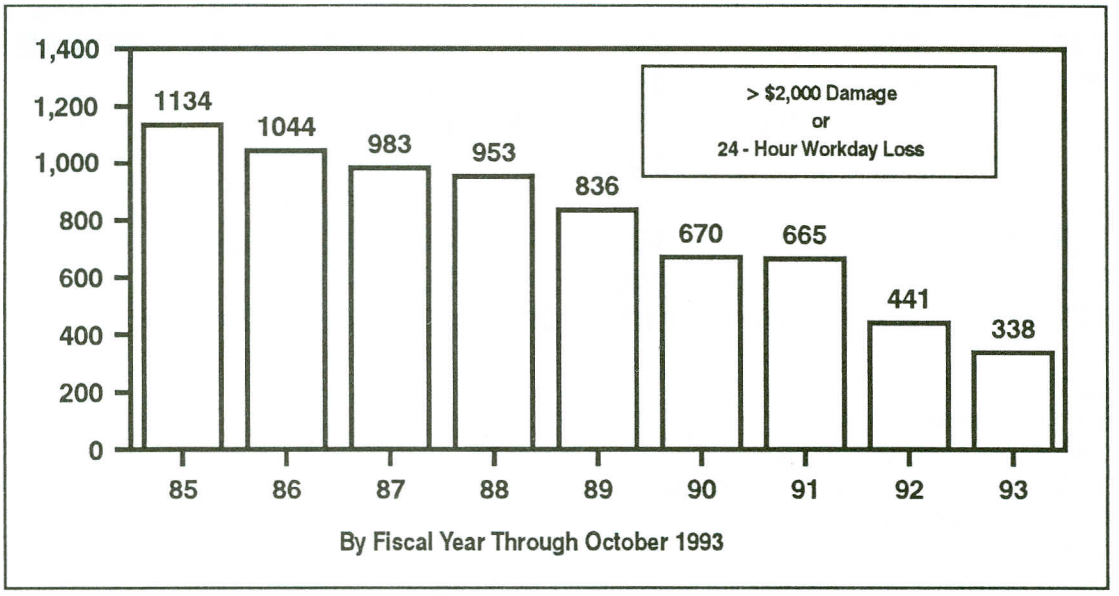


Figure 1. Quartermaster Corps Recordable Accidents

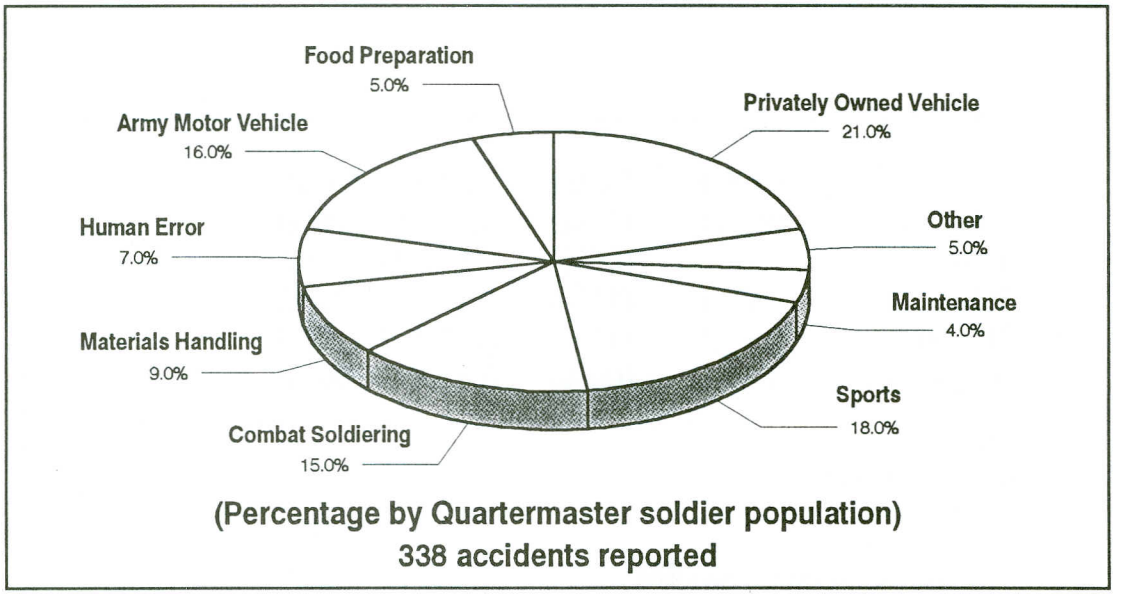


Figure 2. FY 1993 Quartermaster Accidents

ACCIDENT TYPE	MOS 57E	92A	92Y	77F	94B	OFF	TOTAL FATAL	TOTAL PRTDSB
POV	0/1	1/0	9/0	1/0	1/2	-	12	3
AMV	-	2/0	-	1/0	1/0	-	4	0
CBT SOL	-	-	0/1	-	-	-	0	1
WATER SPORTS	-	-	1/0	-	1/0	1/0	3	0
MISCELL	-	2/0	1/0	-	1/0	-	4	0
TOTALS	0/1	5/0	11/1	2/0	4/2	1/0	23	4

LEGEND:
AMV = Army motor vehicle
CBT SOL = Combat soldiering
MOS = Military occupational speciality
POV = Privately owned vehicle
MISCELL = Miscellaneous
OFF = Officer
PRTDSB = Permanently disabled

Figure 3. Quartermaster Fatal/Permanently Disabling Accidents for FY 93

	FY 90	FY 91	FY 92	FY 93
CBT SOL	(21%)	(21%)	(21%)	(15%)
AMV	(17%)	(25%)	(15%)	(16%)
POV	(17%)	(11%)	(16%)	(21%)
SPORTS	(14%)	(11%)	(17%)	(18%)
MAT HDLG	(08%)	(09%)	(08%)	(09%)

LEGEND:
AMV = Army motor vehicle
CBT SOL = Combat soldiering
FY = Fiscal year
MAT HDLG = Materials handling
POV = Privately owned vehicle

Figure 4. Five Most Common Quartermaster Corps Accidents

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.

LIC 2010: Special Operations and Unconventional Warfare in the Next Century
Rod Paschall, Brassey's (US), Inc.: New York, 1991.

This is Volume V in a Future Warfare Series published with the Institute of Hand Warfare Association of the U.S. Army. Each book is written by an expert, and this author was commander of the Delta Force, U.S. soldiers who deal with international terrorism on a moment's notice. He analyzes lessons learned 1945 to 1990 and then predicts the future of special operations and low-intensity conflict (LIC).

Supply By Sky: The Quartermaster Airborne Development, 1950-53
William H. Peifer, Department of the Army, Office of the Quartermaster General: Washington, D.C., 1957.

This historical study talks about the important role played by the Quartermaster Corps in supplying airborne equipment and advancing the art of aerial delivery, particularly during 1950 to 1953. Begun after the Korean conflict, this monograph put together information that existed only in reports, unpublished unit histories, and magazines. The result is a single, fairly comprehensive account of Quartermaster airborne development, especially for the period indicated.

The Quartermaster Corps: Operations in the War Against Germany
William F. Ross and Charles F. Romanus, Government Printing Office: Washington, 1965.

Publication of this volume completes the subseries dealing with Quartermaster operations during World War II. Two companion volumes of this group described the Quartermaster organization and achievement in the United States, and a third told about operations in the Pacific in the war against Japan. The main Quartermaster function in World War II was to supply items needed by all Army troops, most notably, food and clothing. However, the Quartermaster Corps was more than a supply force. Quartermasters provided many services, such as bath and laundry facilities, necessary to the health and comfort of the troops. Also, the prompt collection and careful identification and burial of the dead and the respectful and suitable disposition of their possessions were essential services that contributed much to the morale of the front line soldier. By the spring of 1945 the Quartermaster organization in the European theater was supporting more than 7 1/2 million people, the largest human support operation by a single organization in all history to that time.

The Wars of America
Robert Leckie, Harper Collins Publishers, New York: 1992.

The author attempts to show not only how our wars were fought but also why they occurred, as well as to illustrate what this country has gained or lost by appeals to arms. Equally, he attempts to portray those who made and fought these wars. This book begins with the French and Indian Wars and follows American warfare chronologically through the recent war in the Persian Gulf.

In Mortal Combat: Korea, 1950-53
John Toland, William Morrow and Company, Inc., New York: 1991.

Toland gives a good account of the fighting during the Korean War. He also shows the political reasons that led to American involvement and the reasons we kept fighting. Lastly, the author attempts to throw light on numerous controversial matters that surfaced following the armistice.

Civilian Employee Logistician of the Year

LT Lance E. Scott

Throughout history, army units, regardless of size, have recognized exceptional soldiers. This recognition comes in many forms to include soldier of the quarter and year awards. These awards are sometimes presented as high as Department of the Army level.

Around the world, thousands of civilian employees work to help the U.S. Army be the world's finest. To date, however, Army recognition of civilian employee service has lagged behind other Army programs.

On 25 Mar 93, The Quartermaster General and the Deputy Chief of Staff for Logistics' Functional Chief Representative (DCSLOGFCR) signed a memorandum of understanding (MOU). The MOU's subject was Quartermaster participation in the management of Civilian Career Program 13 (Supply Management). The objective was to identify programs capable of increasing Quartermaster Corps' interface with the Corps' civilian counterparts. One goal noted the need for an award program to recognize exceptional performance in the field of supply management. This goal led to the concept of the Supply and Services Logistician of the Year (SSLY) award program.

The SSLY program quickly expanded to encompass Civilian Career Programs 62 (Troop Support) and 63 (Mortuary Affairs). Combined, the three career programs comprise a pool of over 14,000 General Schedule (GS)-level civilian employees. These personnel work around the world wherever Army installations are found.

A parallel award program was concurrently developed to encompass over 9,000 Wage Grade (WG)-level civilians working in Civilian Career Programs 78 (Troop Support) and 91 (Warehousing), known as the Warehousing and Troop Support Logistician of the Year (W&TSLY).

The programs recognize GS and WG civilian employees who demonstrate outstanding job performance and who have made significant, quantifiable contributions. The award selection process is completed in four phases: program notification, nomination, board review and award presentation. Award categories within these programs are divided by annual salary amounts.

These programs are currently in their final stages. The award nomination window for both award programs opens 1 Apr 94 and will remain open until 30 Jun 94. Award boards for both programs will convene in July to select award winners. With the Army downsizing and budgets shrinking, we must recognize personnel responsible for helping the Army do more with less.

For award program specifics and nomination packet information, write to:

Commander
U.S. Army Quartermaster Center and School
ATTN: ATSM-QMG
Fort Lee, VA 23801

LT Lance E. Scott is a November 1993 graduate of the last Quartermaster Officer Advanced Course at Fort Lee, Virginia.

Supply Management Career Initiatives

Supply management careerists must take charge of their careers. The Supply Management Career Program includes civilians in General Schedule 5 through Senior Executive Service (SES) positions. There are over 6,300 supply management careerists Armywide.

The Functional Chief Representative in the Supply Proponency Office, Headquarters, Department of the Army, Office of the Deputy Chief of Staff for Logistics, ever mindful of the need to have a greater integration between military and civilian professionals, continues to forge new links between the supply management career program and the U.S. Army Quartermaster Center and School. Today, Headquarters, Department of the Army, and the U.S. Army Quartermaster Center and School are working together in development of civilian careerists. The Army's Quartermaster School plans to send logistics trainers to the Army's School of Engineering and Logistics to teach field-level supply operations and policy. A pilot program enables civilians to attend the Quartermaster Officer Basic Course (QMOBC) at the U.S. Army Quartermaster Center and School, Fort Lee, VA. (An article about the first civilian in the course, "QMOBC - A Civilian Among Us" by LT Mark A. Thomson, appeared in the Autumn 1993 *Quartermaster Professional Bulletin.*)

Planning for the future, civilians will be able to attend the Combined Logistics Officer Advanced Course (CLOAC) at the Army Logistics Management College, Fort Lee, VA. In addition, the Army Functional Chief Representative for Supply sponsors a variety of developmental assignments and financial support for full-time college undergraduate and graduate education. These programs are making the Army's "seamless" supply systems a reality.

TOTAL FORCE

Reserve Component Combined Logistics Officer Advanced Course (RC CLOAC)

All combat service support (CSS) proponent representatives met at the Army Logistics Management College (ALMC) on 7-8 Oct 93 to present each school's position on course standards for qualifying officer advance course graduates, such as the Reserve Component officer, with limited training time. The presentations produced extensive discussion. Each school will canvas the field for the best course of action for RC CLOAC requirements.

The field survey results are expected within the next quarter. Additional studies will investigate the best possible approach to training and qualifying RC officers in the technically oriented field of logistics. RC CLOAC is scheduled to begin in FY 94.

92A For Reserve Components

Fielding of the 92A10 Reserve Component Configured Courseware (RC3) package is expected in the 2d Quarter, FY 94. Reserve Component Training Institutions (RCTIs) should request 93A10-level material for FY 94. The RC3 material for the military occupational specialty (MOS) 76 series should not be used and will not be available for FY 94. The U.S. Army Quartermaster Center and School (USAQMC&S) recommends that RCTIs use the annual training phase of the RC3 package to begin 93A10 and transition training in FY 94. The proponent has determined that doing the annual training phase out of sequence will not have an adverse impact on RC 93A training. This should be done in FY 94. The USAQMC&S designated 92A RC3 training as a pilot course in FY 94. This will allow a RCTI instructor to teach the course without being a graduate of the same course as specified in FORSCOM/TRADOC Regulation 135-3. However, RCTIs should strive for an individual who is task-trained, but not necessarily MOS-trained, for each block of instruction. This will also allow cross-training time for the instructors.

For unit status reporting, 92A soldiers with the Y2 additional skill identifier (ASI) are considered MOS qualified. MOS 92A is considered a substitute for the 76C, 76P, 76V and 76X MOSs. POC for this action is MAJ Lojek at DSN 687-5452 or Commercial (804) 734-5452.

Free Food Service Training

Food service support is at your fingertips. Food Management Assistance Teams (FMATs) are available to provide assistance to help improve your food service operations. These teams are available on both a scheduled and requested basis to U.S. Army Reserve and Army National Guard units during their annual training periods. Teams provide hands-on assistance with food preparation, administration, field equipment, field sanitation and safety, and other food service concerns.

The Army Center of Excellence, Subsistence (ACES), at the U.S. Army Quartermaster Center and School provides funding for this source of "free" training. To request an FMAT visit, follow the procedures outlined in AR 30-1 (The Army Food Service Program, paragraph 3-1).

The ACES point of contact is MAJ Roberto Rubet, Management Assistance Division, Army Center of Excellence, Subsistence, U.S. Army Quartermaster Center and School, Fort Lee, VA 23801, DSN 687-7251 or Commercial (804) 734-7251.

In My Mirror, A Backward Glance

LTC James F. Ninnis

I have never been one to look back over my shoulder, unless that is the direction I intend to move. However, I think that at the end of a 28-year career in Army Active, Reserve and Active Guard/Reserve units, a look at change is needed. I do not mean the changes in structure alone, but the changes that have preceded an entirely new Quartermaster Corps. The new Quartermaster Corps has emerged with new concepts, doctrine and a more profound attitude that "Logistics Warriors" is not just a title but a spirit of providing the force the ability to respond to a worldwide mission and succeed.

When the issues involved only a jungle war in Vietnam, Quartermasters provided some unique solutions to problems such as adapting air and sling load deliveries to support far-flung operations, developing air-transportable fuel "bladders," and introducing "hot fueling." A new ration was being explored and night vision devices were in their infancy.

Military focus became a European theater of war with the Soviet Union being the threat. Who could foretell the fall of the communist state, and the opening of the city of Berlin? At one time we worked war games around a mythical advance and attack through the Fulda Gap. Now only a Volkswagen going on a trip races through the Gap—a change in our tactics and delivery of logistics to the Army.

With *Operation Desert Shield/Storm*, the U.S. and civilian forces defeated the Iraqi army. We succeeded with delivery of logistics under new and changing battle conditions. The Army National Guard and U.S. Army Reserve played a major part in delivering supplies and services and will continue to play an ever-growing role in a changing world. New terms are now in our vocabulary. We are participating in relief and nation-building operations, and in peace-keeping forces. Our role begins to be redefined in multifunctional logistics, automation and communications.

Redefinition of our role and progress demand that the Reserve Components become more proactive in training and education at all levels. We need to dedicate our efforts to

maintain the highest states of training and readiness and to prepare for any mission at any time. We are almost 70 percent of the Quartermaster Corps. As such, we will touch the life of every soldier every day. So, as I look in the mirror and see over my shoulder, I do not see sadness. I see new soldiers, noncommissioned officers, warrant officers and officers taking charge of the Quartermaster Corps. I see people willing to give 110 percent to accomplish the mission. I see Logistics Warriors, and then I look forward again to a new road.

LTC James F. Ninnis was graduated from the University of Puget Sound/Tacoma General Hospital as a Registered Nurse. His military education includes graduation from the Quartermaster Officer Advanced Course, the Army Medical Department Officer Advanced Course, the Infantry Officer Advanced Course and the Army Command and General Staff College. His military career began as an enlisted medical corpsman in October 1965. He attended and was commissioned from the Quartermaster Officer Candidate School, Fort Lee, Virginia, in March 1967. During his Army career, he served as a Platoon Leader with the 226th Supply and Service Company in Vietnam and as Company Commander, 148th Supply and Service Company in Vietnam. His assignments have included Services Officer, Directorate of Logistics, Fort Lewis, Washington; Executive and Training Officer, Detachment 1, 50th General Hospital, Tacoma, Washington; Instructor, 6236th U.S. Army Reserve Forces School, Tacoma, Washington; Executive Officer and Commanding Officer, 2d Battalion, 415th Regiment, 104th Infantry Division (Training). He was called back to Active Guard and Reserve duty to serve as the Deputy Chief of Plans and Operations, Director of Logistics, Fort Lewis, Washington. He has served as Deputy Inspector General, 310th Theater Army Area Command, Fort Belvoir, Virginia. He recently retired as the Deputy Assistant Commandant, U.S. Army Reserve, U.S. Army Quartermaster Center and School, Fort Lee, Virginia.

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CAREER NEWS

The Last Quartermaster Officer Advanced Course

CPT Janet E. Ross-Maloney

As an Ordnance officer attending the Quartermaster Officer Advanced Course (QMOAC), I have been given a great opportunity to enhance my logistical education. However, the fact that I am attending the **last** QMOAC has made this experience even more meaningful.

The phasing out of QMOAC marks the end of one chapter in Quartermaster training history, and the beginning of another. The Army has revised its approach to leader development often during the 20th century to meet wartime needs, or to take advantage of some new training philosophy or technique. This latest change comes amidst wholesale efforts to redefine the Army's post-Cold War mission and doctrine. Whatever the outcome of this debate, it's for certain the Quartermaster Corps will be sought to produce highly qualified company grade officers who can deal effectively with the multifunctional challenges of the 21st century.

History

The U.S. Army Quartermaster School, which opened its doors in 1910 at the Philadelphia Depot, initially trained only noncommissioned officers. In the fall of 1921, the school established an Officers Course Division to train lieutenant-level officers for basic Quartermaster duties. This nine-month program of instruction included such subjects as horseback riding and saber drill, along with the study of clothing and textiles, and business and accounting.

By 1923 the first Advanced Officer Course was added. In the decades leading up to World War II, the old Quartermaster School at Philadelphia produced annually between 40 and 50 advanced Quartermaster officers, ranging in rank from first lieutenant to lieutenant colonel. During the emergency mobilization on the eve of World War II, the Philadelphia School rapidly expanded its officer training program to include Reserve Officers' Training Corps (ROTC) graduates. The Quartermaster School

These 50 Quartermaster officers, ranging in rank from first lieutenant to lieutenant colonel, represent half of the Advanced Quartermaster Officers' Class of 1948-49 at The Quartermaster School, Camp Lee, Virginia. After World War II, only one such lengthy course was offered per year. Pictured in their yearbook, these classmates were similar in race, gender and military experience. For example, students in the all-male class were older than their counterparts of today, and they shared wartime military experience in the same war. The six international students came from Brazil, the Philippines, England, Canada and China.

relocated to Camp Lee, VA, in October 1941 (two months before Pearl Harbor).

Following the close of World War II, a period of complete reorganization and reorientation took place. Thus, in 1946-47 the first QMOAC, as we know it today, was established. The primary purpose of the course was to prepare Quartermaster officers for command and staff duty positions within the Quartermaster Corps. The course was 10 months. The curriculum was divided into three phases: administration, supply, and field operations.

Thereafter, the Advanced Course conformed to the evolution of the U.S. Army Quartermaster Center and School, as it gradually became the primary training center for all officers and enlisted soldiers.

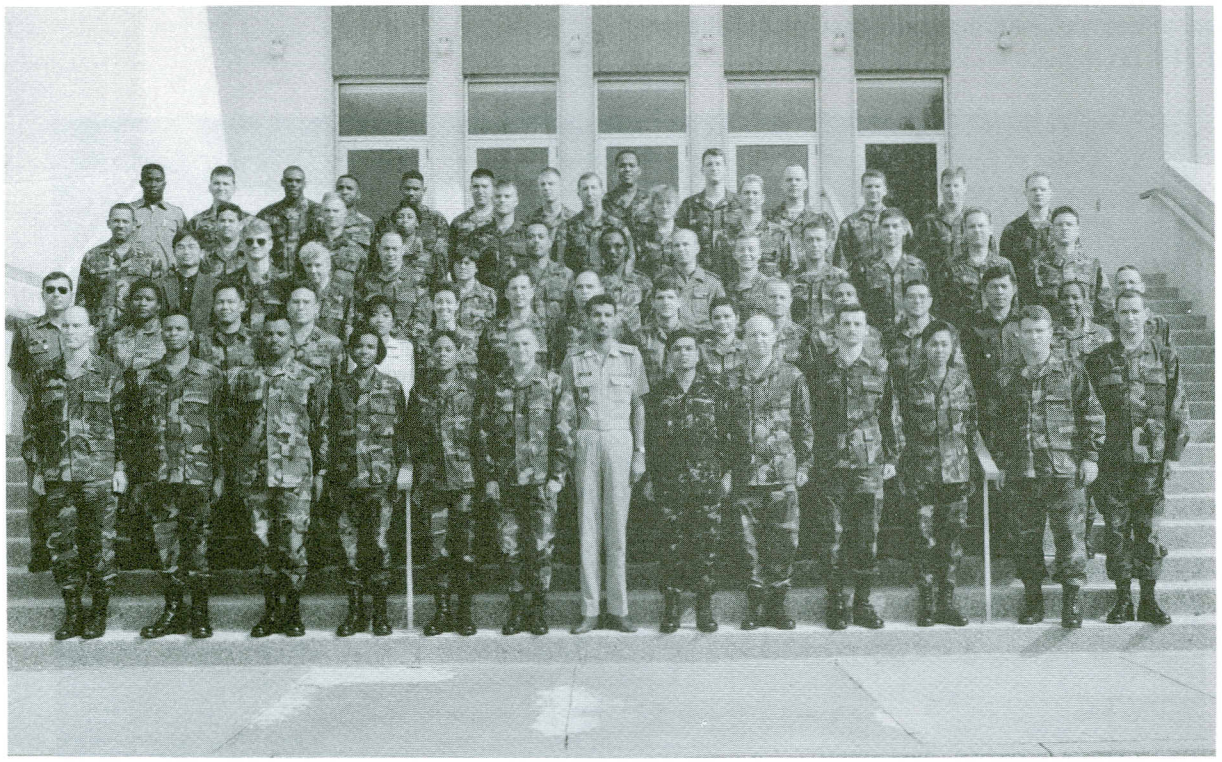
In the 1950s, the School picked up the airborne supply training mission, brought petroleum and subsistence training to Fort Lee, VA (from Chicago, IL, and Caven Point, NJ, respectively) and greatly improved other areas of supply and service training.

Present

The history of the Advanced Course would not be complete without a brief demographic summary of the students and curriculum of the last QMOAC. We have an unusually large class of 61 students. The students come from a variety of backgrounds. There are 11 international student officers coming from such places as Poland, Cameroon, Taiwan and Bangladesh. The rest of the officers have had various leadership positions in *Operation Desert Storm*, in Somalia humanitarian relief operations, the Hurricane Andrew relief mission, Germany, Korea, and elsewhere.

Before the start of the last QMOAC, the officers had various expectations. Many who were branch-detailed from the combat arms worried that their lack of Quartermaster experience would put them at a disadvantage. Others doubted they would receive the same caliber of training as the officers attending the Combined Logistics Officer Advanced Course (CLOAC), which replaced QMOAC at the beginning of fiscal year 1994. Despite our doubts, just about everyone felt a certain pride in being part of the last QMOAC.

The primary mission of the QMOAC has not changed since its start in 1947. However, the curriculum has changed to meet the growing needs of the Army. The newest



The class of 61 officers in the last Quartermaster Officer Advanced Course (QMOAC) at the U.S. Army Quartermaster Center and School, Fort Lee, Virginia, was unusually large. The class, which graduated in November 1993, consisted of 49 men and 12 women. Most were captains, and many had been branch-detailed from the combat arms. The graduates included 11 international student officers from such places as Poland, Cameroon, Taiwan and Bangladesh. The U.S. officers had held various leadership positions in *Operation Desert Storm*, in Somalia humanitarian relief operations, hurricane relief efforts, Germany, Korea, and elsewhere. The Combined Logistics Officer Advanced Course based at the U.S. Army Logistics Management College, Fort Lee, Virginia, replaced the QMOAC at the beginning of FY 94.

subjects include support operations, a map exercise (MAPEX), a National Training Center exercise, a deployment exercise, a Joint Readiness Training exercise and a disaster relief exercise. These exercises give the students firsthand knowledge of providing logistical support to combat troops in a wide range of environments.

The soldiers who branch-transferred from the combat arms were not at a disadvantage after all. They knew what the combat arms needed in combat, and this helped in the overall plan of pushing supplies forward.

With three-quarters of the course completed, do the last QMOAC students still worry that they will be less prepared than the CLOAC graduates? Before I answer that question, let me tell you about CLOAC.

The Future

The CLOAC's mission is to prepare senior lieutenants and junior captains for company command and multifunctional battalion and brigade-level staff logistics assignments.

Branches represented are Quartermaster Corps, Ordnance Corps, Transportation Corps, Medical Service Corps, and Army Aviators with the logistical identifier.

CLOAC has three phases. Phase I at Fort Lee focuses on tactics, training, command leadership, communicative skills, military history, and other general subjects. The course also includes a staff training exercise and MAPEX where different branches interact and develop multifunctional briefings.

In Phase II, the officers return to their branch schools for branch-specific instruction.

Phase III brings the students back to Fort Lee. This final phase emphasizes preparing officers to apply the combat service support operating systems to arm, fix, fuel, move and sustain the force. This phase also includes the Army Support Operations Course developed by the Army Logistics Management College. During the final weeks, officers develop logistics estimates and plans, and conduct practical exercises on support operations.

Now, back to the question, do the last QMOAC students feel at a disadvantage compared to future CLOAC graduates? "Most definitely not" is the consensus of the class. The Quartermaster soldier is the original logistician. Much of the CLOAC curriculum comes directly from the QMOAC. What really matters is how the graduates of both courses apply what they learned to their next assignments.

The QMOAC has been preparing officers to supply soldiers in garrison and in combat for most of the 20th century. The QMOAC has been consistent in adjusting its curriculum to the changes of the Army. With the Army's current need for multifunctional logisticians, we must say good-bye to traditional advanced courses and welcome a new multifunctional advanced course. The addition of all combat service support officers will add depth to the Quartermaster concept.

CPT Janet E. Ross-Maloney is a graduate of Central Missouri State University. She has completed the Ordnance Officer Basic Course, Quartermaster Officer Advanced Course, and Airborne School. She served in the 525th Ordnance Company, Germany, as Platoon Leader, the 59th Ordnance Brigade as the S1/Adjutant and G3 Assistant Operations Officer; and with the 41st Ordnance Company as the Operations Officer. A graduate of the last Quartermaster Officer Advanced Course 93-5 in November 1993, she is currently serving as Military Editor of the Quartermaster Professional Bulletin.

Quartermaster Officer Professional Development

As the Army continues to draw down, we at the Quartermaster Branch, U.S. Army Total Personnel Command (PERSCOM), would like to update all officers about some new changes, developments and trends in the assignment and professional development arenas.

The Army's personnel strategy for the 1990s. By now, everyone should understand that today's Army will be smaller and also more deployable and expandable than in recent years. Reshaping the Army has been carefully planned. Personnel reductions have been and will continue to be tough. However, care, compassion and common sense will accompany all these alignment programs. As an officer in today's Army you can still count on several things:

- Quality people
- Steady promotion
- Annual selection boards
- Continued commitment to the family

Knowing the strategy and expectations, we would like to provide the **good news**. First and foremost, the officer drawdown is now 75 percent complete. There will still be more reductions. However, the officer corps has passed through most of the rougher times. Secondly, promotion opportunity will be maintained at the same Defense Officer Personnel Management Act (DOPMA) levels as before. In some cases, they will improve. For example, pin-on point for majors will be coming down from about 11 years 11 months to 11 years and 5 months with a goal of 10 years by 1995. FY 94 will be the last year for the Lieutenant Retention Boards. There will be no field grade reduction in force (RIF)—early retirement will be used to size/shape the force. Finally, colonels will face the Selective Early Retirement Board (SERB) only once.

Here are other key points to know to help in career management:

Stay in touch with your branch. Keep us updated with current addresses and phone numbers for both duty and home locations. It is imperative that we can contact you to evaluate and discuss your career and file when we need to.

For all the RIF boards, we were asked to contact all officers whom we felt were at risk. Literally, we had to shut down the office and track each and every officer down. Your assignment officers are the following: LTC Golla, Branch Chief, Chief of Assignments; MAJ Wharton, LTC Assignments; MAJ Sullivan, Major Assignments; CPT Perales, Company Grade (CPT), Post Advanced Course; CPT Hamilton, Company Grade (LT), Through Advanced Course; CPT Chastain, Future Readiness Officer; Mrs. Fowler, Field Grade Technician; and (Vacant), Company Grade Technician. Our phone numbers are DSN 221-8119/8123 or Commercial (703) 325-8119/8123; FAX is DSN 221-2506.

Send any correspondence to: Commander, PERSCOM, ATTN: TAPC-OPG-Q, 200 Stovall Street, Alexandria, VA 22332-0416.

The next key point is to update your **officer record brief (ORB).** Branch will continue to assist you when you have problems that will affect a board, but 99 percent of all issues go to your local military personnel office (MILPO). MILPOs are staffed with specialists to make these corrections. Unfortunately, Quartermaster Branch is not. Understand that some ORB changes do not take place after the first try. Be insistent, however, and make this work "bottoms up." We need to make the system work and keep the assignment officers managing careers.

Get an updated color photograph. The more current, the better. Five-year old photographs are outdated. Secondly, black and white photographs are now the exception rather than the rule. Upon promotion, take a new photograph. Everyone should also take another service member, whether from the chain of command or not, to observe the shooting and make corrections.

Order your microfiche periodically and ensure that all officer evaluation reports (OERs), Army evaluation reports (AERs) and awards are present. No longer do you call branch for your fiche. To obtain your fiche, put your name, rank, social security number (SSN), and return address on a simple memorandum requesting it. FAX it to DSN 221-0742. Be sure to put your return address on the memo. You should receive your fiche within six weeks after ordering it.

Know what discriminators are in any board: 1) Below center of mass (BCOM) reports; 2) 2s on the front of the OER; 3) off center block checks; 4) failed screening table weight; 5) bad/poor official photograph; and 6) dual center of mass, lower half reports. All these items are viewed as discriminators that could potentially affect promotion or retention.

Lieutenants

All lieutenants should become familiar with DA Pamphlet 600-3 (Commissioned Officer Professional Development and Utilization) in the *Officer Ranks Update*. This pamphlet outlines career patterns and tracks essential for all officers. It discusses branch qualification and covers the types of jobs to get. Although the *Army Times* recently published an article discussing concerns of the career tracks, the final version will be the best single source of information for understanding what officers need to do for successful careers.

FY 93 LT Retention/CPT Promotion Board. By the time you read this article, the combined board for YG 90 should have adjourned. Remember that for lieutenants the average number of OERs that may be in a file is two or three. Therefore, you must perform well on these reports. Do not worry about the job that you are in. Performance remains the single most important key to success. Academic Efficiency Reports are also gaining increased emphasis due to the lack of available information in the file.

Quartermaster Branch
FY 93 Captain Retention Board Results

- Lieutenant Retention Board:
  - 216/286 Quartermaster officers retained
  - 64/70 not retained had below center of mass (BCOM) reports.
  - 6/70 not retained had center of mass (COM) reports.
- Typical Profile for nonretention (discriminators):
  - 2s on the front
  - Off block checks
  - Senior Rater profile BCOM
  - Failed screening table weight/photograph appeared overweight.
- Retained but not selected:
  - 216 considered for promotion
  - 30 not selected
  - 24 had COM file
  - 6 had dual COM lower half reports in file.
- For selection to CPT:
  - 186 selected for promotion
  - COM file and better
  - No discriminators

The Combined Logistics Officer Advanced Course (CLOAC) at Fort Lee, VA, replaces the Quartermaster Officer Advanced Course.

By October 1993, the **remainder** of YG 91 branch detail had been to the Quartermaster Officer Branch Qualification Course. Everyone must understand that these officers have always been Quartermaster officers but were detailed out to the combat arms branches to help offset their requirements and available inventory. As they reach the dates the **branch detail expires (BREX),** they become Quartermaster Corps assets. Many units try to continue to hold onto these officers past their BREX dates. However, this program is congressionally mandated with set dates for changing from the detailed branch to the basic branch.

Quartermaster Branch policy is that these officers move on their BREX dates. The qualification course is not a requirement for converting back to the basic branch. Offic-

ers will attend the first available qualification course after their BREX dates. Because of the number of qualification classes, a detailed officer must attend the qualification course in the year his or her year group attends. They began hitting their BREX dates in October 1993. The following qualification classes for this year's group will begin in 1994.

CLASS	DATES
94-1	9 Jan - 7 Feb 94
94-2	1 May - 27 May 94
94-3	10 Jul - 5 Aug 94
94-4	28 Aug - 26 Sep 94

Captains

The most immediate thing affecting most captains in YG 85 is the RIF Board currently scheduled for February 1994. If you are a captain with a date of rank of 2 Feb 89 - 1 Mar 90, please call for a file assessment, especially if you have any of those previously mentioned discriminators. Also it is important to note that officers in YG 85 are eligible for voluntary separation incentive/special separation benefit (VSI/SSB) until 25 Jan 94. Keep this in mind, especially if you feel that you are at risk.

Most officers in YGs 84 and 85 will be seen for the majors promotion board. Please ensure and prepare now for the upcoming board.

Two other points are important to Quartermaster officers. The first is branch qualification. Branch qualification at the CPT level consists of completing the advanced course, successful company command and completion of the Combined Arms and Services Staff School (CAS3). If your goal is to be a battalion commander, success in command is essential. Above COM command reports give you the best chance of making Command and General Staff College (CGSC), which to a large degree is a precursor to command. The chances of commanding without resident CGSC are significantly reduced.

After branch qualification, many Quartermaster CPTs will find themselves in one of the following positions:

- Active Component/Reserve Component (AC/RC)
- Reserve Officers' Training Corps (ROTC)
- Recruiting

AC/RC is a congressionally mandated program which is a high priority for the Army and the branch. ROTC and recruiting remain high priorities. As the population continues to draw down, many officers can expect to serve in one of these positions.

After branch qualification, officers many be interested in either a fully funded **Advanced Civil Schooling (ACS)** program or the **Logistics Executive Development Course (LEDC)** with a possible follow-on in a master's program at the Florida Institute of Technology (FIT).

The fully funded ACS program offers selected Quartermaster officers an opportunity to obtain an advanced degree in a discipline directly related to their area of concentration, functional area or skill. The ACS program allows 18 months for degree completion with exceptions to 24 months for more technical programs.

The selection process for ACS is extremely competitive due to the limited number of slots available in a given fiscal year. ACS selection is based upon an officer's military and academic records.

To apply for ACS, officers must have successfully commanded, be branch qualified, and have attended CAS3. Interested officers should ensure that their files contain official copies of all college transcripts, a current Graduate Record Exam (GRE) score (less than five years old) and, if applicable, a Graduate Management Admissions Test (GMAT) score. All officers should have an academic background that will support graduate level training.

Officers selected for ACS have all tuition costs and fees paid by the Army. A service obligation of three days for every one day in school is incurred. Officers will serve a minimum of three years utilization assignment upon completion of school. Detailed application procedures are outlined in AR 621-1.

In addition to the fully funded ACS program, selected Quartermaster Officers have an opportunity to receive an advanced degree in logistics management for the cooperative degree LEDC/FIT program taught at Fort Lee. LEDC/FIT is a one-year program offered in January and August of each calendar year. Unlike the ACS Program, LEDC/FIT is not fully funded. Each officer is responsible for paying the tuition cost of about $7,000.

Officers must meet the following requirements for selection to LEDC/FIT:

- Have a good file.
- Be branch qualified.
- Have completed CAS3 before the start of the program.
- Have not less than 8 years of commissioned service and not more than 17 years active federal service before the FIT class start date.
- Have a minimum of 36 months of hard-core logistics experience.
- Have successfully completed a college level algebra or statistics course.
- Have a grade point average (GPA) of 3.0 or above to be accepted as a regular student and at least a 2.75 as a provisional student. Officers with less than a 2.75 GPA must take the GMAT/GRE and receive a suitable score to be accepted.

To apply for LEDC/FIT, interested officers should submit a DA form 4187, a letter of recommendation, and a complete set of official undergraduate college transcripts and/or GRE/GMAT scores to branch. All requests for schooling should be received not later than six months from the start of the program. All officers applying for LEDC/FIT will be notified once the results of the board actions are complete.

Majors

By now, everyone should know that the FY 94 Major SERB for YG 78 officers is cancelled. However, the selective continuation board is still on. All majors who have been nonselects to LTC two or more times, who have less than 20 years of active federal service and do not have a retirement date before 31 Aug 94 will be screened.

One point to emphasize is performance in key branch-qualifying positions. Generally speaking, to be competitive for battalion command, all officers need to get above COM reports in the key branch qualifying positions. COM reports in these positions do not mean failure. Officers can and will still make LTC with these reports if the rest of the file is still in good shape.

Lieutenant Colonels

On the horizon are several key events that have the attention of most LTCs. The first was the FY 94 LTC SERB from 26 Oct through 24 Nov 93. Results of the board are due out in February 1994. Officers identified for early retirements must be separated from the Army not later than 30 Jun 94. If previous SERB boards and their results hold true, longevity seems to be one of the most distinguishing criteria. This means that those with the most active federal service time are most vulnerable when everything else is equal. The target profile are those officers who are in YGs 67-74 and have not commanded, are one-time nonselects to COL and have below COM OERs in their files. The number of officers to be "SERBd" within the Quartermaster Branch is estimated between 12-18 officers. Since Quartermaster LTCs make up approximately 4 percent of the Army and our population is currently about 408 officers (including those who have functional area 90), we can expect approximately 16 officers "SERBd" based on what would be our fair share.

The next major event for our population is the FY 94 LTC CSS Command Board. After reviewing all the board files during the preboard scrub, we should have a fair share of commanders selected. Also, Quartermasters will have several officers selected to command on their second look. Last year, unit deactivations played havoc on the number of commands available. An increase in the number of commands coupled with the fact that there is only one unslated principle in our four biggest command categories — forward support battalions, main support battalions, multifunctional nondivisional battalions, and separate support battalions — should give us more commands .

As for the assignment business, Quartermaster LTCs are still a shortage branch. What that means is that tour lengths will be directly affected. Normal tour lengths for the continental U.S. (CONUS) based officers are 24 months. Generally speaking, CONUS-based officers can expect their next assignment outside the continental U.S. (OCONUS). We continue to try to keep other tour lengths stable. Expect to complete your full joint tour. Also, U.S. Army Europe (USAREUR) assignments will remain close to 36 months.

As the Army continues to draw down, the Quartermaster Branch wants everyone to know about what was happening with the assignment process. During these realignment times, soldiers need to know what these new changes, developments and trends in the assignment and professional development areas are.

Our branch guidance to everyone continues to be to set realistic goals, do every job well (COM and better), keep your ORB updated, have a current color photograph, and stay in touch with branch. If you do all these things, you should have a successful career in today's Army.

Senior Service College Selection Board Academic Year (AY) 94/95

Thirteen Quartermaster officers were selected to attend a resident senior service college (SSC) during AY 94/95. Two were revalidations from the previous board. Also, nine other Quartermaster lieutenant colonels were alternate SSC selectees for AY 94/95.

The SSC Selection Board established eight Officer Personnel Management System (OPMS) Career Field Floors for Functional Area (FA) 90. The FA 90 requirements were met by six Transportation (TC) officers and one Aviation (AV) officer with 92 as their functional area and one Ordnance (OD) officer with 90 as his functional area. Quartermaster officers must sign up for FA 90 to be eligible for the FA 90 OPMS Career Field Floor requirement. TC and OD have enough of an advantage (more LTC Functional Commands) over Quartermaster officers without excluding themselves from the available FA 90 seats.

There was only one LTC (Promotable) and no COLs selected as principal selectees from Quartermaster, TC or OD for AY 94/95. The LTC (Promotable) was a revalidation from the AY 93/94 list. There were 21 LTC (Promotables) and one COL on AY 93/94 list. Only four LTC (Promotables) and the COL were revalidations from the previous board.

Selection to SSC without a LTC command is a rarity. All Quartermaster selectees had a Command-Designated Priority List (CDPL) Battalion Command. (5 FSB; 1 S&T; 2 CSB; 1 supply; 1 POL; 1 CEGE)

The Year Groups (YGs) of Quartermaster selectees are 5 from '73 and 2 each from '72, '74, and '75. The Quartermaster Corps' two female selectees are from YG 75.

All were military education level (MEL) 4 (Command and General Staff College) and 10 of the 11 were civilian education level (CEL) 2 (master's degree).

Key experiences were five joint duty, four U.S. Total Army Personnel Command (PERSCOM), one Deputy Chief of Staff for Logistics (DCSLOG), one Division G4, and four served in Southwest Asia.

Historically, in-the-zone SSC selectees, students or graduates are selected for promotion on the subsequent colonel promotion board.

Other related trends: six of the 17 Quartermasters selected on the FY 94 Colonel Level Command List were attending resident SSC. Most other selectees had just completed SSC. In addition, two of five Quartermaster officers serving in the Army Acquisition Corps (AAC) were in SSC at the time of their selection for an Acquisition Command (FA 97) and the other three had just completed SSC.

Of the 17 Quartermasters selected for combat service support colonel commands, three were colonels and revalidations from the FY 93 list. Of the other 14 Quartermaster officers, 12 were LTC (Promotables). (Four of the five Quartermaster officers in AAC were also LTC (Promotable).)

The trend to select promotable officers for command was also prevalent on the FY 94 LTC Command List. This was especially true for the OD Corps with 20 of the 30 selected MAJ (Promotables). TC was 10 of 20 and Quartermaster only 5 of 22. Of the 22 Quartermasters, five were revalidations and all five were LTCs. Major (Promotables) were selected for 20 of the 37 multifunctional commands available. (FSB, MSB, nondivisional and SEP). Only 15 MAJ (Promotables) were selected in the 35 available functional commands.

Quartermaster leadership must stress the importance of a successful LTC command, of the role SSC plays in board selection to colonel and for colonel-level commands, of having FA 90 documented in Officer Record Briefs, and the trends of selecting promotable officers for command.

Warrant Officer Newsletter

The Warrant Officer Division of the U.S. Total Army Personnel Command (PERSCOM) provides information to warrant officers, their commanders and personnel managers in a periodic Warrant Officer Newsletter. For further information on this publication, contact Commander, PERSCOM, ATTN: TAPC-OPW, 200 Stovall Street, Alexandria, Virginia 22332-0420. Telephone Commercial (703) 325-7843, or DSN 221-7843.

Degree Completion Program (DCP) Application Procedures

PERSCOM's Warrant Officer Division must receive applications for degree completion and permissive temporary duty (TDY) at least five months before the projected university start date. The popularity of the new baccalaureate DCP has increased the number of applications, making exceptions to the time requirements impossible. Requests for exception to policy will only be considered for officers whose situation through no fault of their own (such as unit inactivations) precludes timely application. Applications that do not meet the five-month requirement will be returned.

Warrant Officer Career Center Update

The Warrant Officer Career Center (WOCC), established in October 1992 as a tenant activity at Fort Rucker, AL, continues to implement the leader development initiatives approved by the Chief of Staff, Army (CSA) and outlined in the Warrant Officer Leader Development Action Plan (WOLDAP). Warrant Officer Candidate School (WOCS) is now an integral part of the WOCC.

Many CW2s already have received a box of instructional material from the WOCC containing Phase 1 of the Warrant Officer Advanced Course. This distributive education course is a prerequisite for attending the resident portion of the individual branch-specific advanced course once the officer becomes promotable to CW3. The material was mailed to CW2s with 72 months of warrant officer service (WOS) as of 1 Oct 93 and will be distributed to all warrant officers as they reach 72 months WOS. Those who already had more than 72 months WOS on 1 Oct 93 will not be included in the correspondence phase.

The Warrant Officer Staff Course, developed for all warrant officers selected for promotion to CW4, began First Quarter, FY 94. This "new" course contains many subjects previously taught in the Master Warrant Officer Training Course (MWOTC) and prepares CW4s to perform at brigade and higher, where appropriate.

The last MWOTC was conducted August-September 1993. It was replaced by the Warrant Officer Senior Staff Course directed at all warrant officers selected for promotion to CW5. This new course began January 1994. Promotable CW4s should contact their career managers to schedule course attendance.

The CSA has approved the consolidation of the Reserve Component-WOCS presently located at Fort McCoy, WI, with the WOCC at Fort Rucker. The target implementation date for the move is 1 Oct 94. The Reserve Component WOCS will continue to focus on soldiers who are unable, due to their civilian jobs, to attend the Active Component six-week course and will maintain its special identity after the consolidation.

Civilian Education Level Updates

PERSCOM's Warrant Officer Division receives numerous requests from officers who have completed their civilian education level (CEL) to reflect the degree awarded on their Officer Record Brief (ORB).

The division has received several transcripts from universities that did not meet the Army accreditation standards. They were returned to the officers, according to AR 640-2-11 (Personnel Qualification Records, Table C-1-1, Section VII, Civilian Education), which states that the degree must have been received from an accredited institution.

To keep this from happening to you, ensure that the university you are attending meets Army accreditation stan-

dards. The education center at your installation can provide guidance on selecting an accredited university.

FY 93 Promotion Board Results

The results of the FY 93 CW3/4/5 promotion board were released 26 Aug 93. Promotion opportunity was greater than the Total Warrant Officer System (TWOS) goals in spite of the drawdown.

Promotion Statistics

Rank	TWOS	AZ	PZ	BZ
To	Goal/Oppty	%	%	%
CW5	44/46.8	29.4	38.4	4.3
CW4	76/78.8	6.6	74.9	4.1
CW3	80/82.5	15.7	78.9	NA

Aviators

To	AZ	PZ	BZ	AGG
CW5	22	148	3	173 (+8)*
CW4	0	246	5	251 (-4)*
CW3	13	172	NA	185 (+10)*

Technical Service

To	AZ	PZ	BZ	AGG
CW5	3	26	10	39 (+5)*
CW4	2	182	15	199 (+20)*
CW3	5	229	NA	234 (+3)*

*Numbers in parenthesis represent selections above or below the TWOS goal.

Level	CW3	CW4	CW5
BA/BS or Higher	28%	33%	55%
AA/AS or Equiv	51%	57%	39%
Below Goal	21%	10%	6%

Civilian Education Codes

Warrant officers are unfamiliar with the codes on their Officer Record Briefs (ORBs). Here's what the civilian education level (CEL) codes mean:

CEL 1 - Doctorate

CEL 2 - Master's degree

**CEL 5 - Baccalaureate degree

* CEL 6 - Associate degree or 60 semester hours

CEL 7 - Greater than 1 semester of college credit but less than 60 semester hours

CEL 8 - High school graduate

*Civilian education goal - five years warrant officer service

**Civilian education goal - 13 years of warrant officer service

Student Detachment Relocation

For warrant officers currently enrolled in Civilian Education Programs, the Student Detachment is now located at Fort Jackson, SC. The telephone number for the Student Detachment is DSN 734-5321 or Commercial (803) 751-5321.

Quartermaster Warrant Officer Applications Needed

Despite the Army drawdown, the United States Army Recruiting Command (USAREC) is currently seeking qualified soldiers to apply for warrant officer (WO) training in Quartermaster specialties. The application process is not very complicated. However, a soldier must meet the following prerequisites:

- Be a U.S. citizen.
- Have a General Technical (GT) score of 110 or higher.
- Be a high school graduate or have a General Education Diploma (GED).
- Have a secret clearance (before Warrant Officer Candidate School attendance).
- Have less than 12 years active federal service (waiverable with Department of the Army approval).

In addition to the mandatory prerequisites, a soldier must have an enlisted "feeder" military occupational specialty (MOS) directly related to the warrant officer specialty. The applicant must also meet specific training and experience prerequisites established by the proponent. These prerequisites are waiverable; but waiver requests are reviewed, approved or disapproved on a case-by-case basis determined by the proponent.

The following is a list of open Quartermaster warrant officer specialties and required enlisted feeder MOSs available to interested soldiers:

WOMOS/TITLE	Enlisted "Feeder" MOS
920A - Property Accounting Technician	92Y
920B - Supply Systems Technician	92A
921A - Airdrop Systems Technician	43E
922A - Food Service Technician	94B

Soldiers who want more information about a specific specialty or an application with instructions are encouraged to call a Warrant Officer Recruiter at Commercial (502) 624-0820/0832/8779/8789 or DSN 464-0820/0832/8779/8789 or write to: Commander, USAREC, ATTN: RCRO-SMO-O, Fort Knox, KY 40121.

If you have a written request, please include name and rank, primary MOS, complete unit mailing address, years of federal active service, and return mailing address.

Aviator Warrant Officer Applications Sought

Despite the Army drawdown, the United States Army Recruiting command (USAREC) is currently seeking qualified soldiers to apply for warrant officer training as a Army aviator. The application process is not very complicated, but the following prerequisites must be met:

- Be a U.S. citizen.
- Have a General Technical (GT) Score of 110 or higher.
- Be a high school graduate or have a General Education Diploma (GED).
- Have a secret clearance (before Warrant Officer Candidate School attendance).
- Be at least 18 but less than 29 years old before selection of training.
- Pass a Class IW flight physical.
- Score 90 or higher on the Alternate Flight Aptitude Selection Test (AFAST).

For more information about a specific specialty or for an application with instructions, call a Warrant Officer Recruiter at Commercial (502) 624-0820/0832/8779/8789 or DSN 464-0820/0832/8779/8789.

Enlisted Personnel Assignment Process

A major effort is underway at the U.S. Total Army Personnel Command (PERSCOM) to increase the involvement of enlisted Quartermasters in their future assignments.

The Enlisted Distribution Assignments System (EDAS) is the main system that PERSCOM uses to fill assignments/nominations (ASNOM). EDAS has increased the amount of points awarded for Continental U.S. Assignment Preference (CONAP) and Overseas Assignment Preference (ORSAP) to 99 points during the ASNOM process. Now the soldier's preference will have a greater impact on future assignments. Soldiers will receive the maximum allowable points, from the preference area, toward an assignment when their CONAPs/ORSAPs match the requisition.

The responsibility to communicate assignment preferences is completely up to the soldier. There are several methods to do this. Soldiers need to continually update their automated CONAP/ORSAP on their Standard Installation/Division Personnel System (SIDPERS) DA Form 2A at their local personnel service center. Soldiers may also submit a DA Form 4187 indicating their preference for assignment. As in the past, soldiers are encouraged to call or visit PERSCOM. All enlisted Quartermasters now have the opportunity for greater involvement in their assignment selection. To ensure this process, soldiers must continually update their assignment preferences on their DA Form 2A.

92Y SSG Airborne Volunteers

The Quartermaster Corps is actively seeking 92Y SSGs to volunteer for airborne training. If interested, submit your training application through your unit training section/ Personnel and Administration Center. The U. S. Total Army Personnel Command (PERSCOM) will aggressively work with applicants to arrange for training and follow-on assignments.

Parachute Rigger Future

The U.S. Army is currently transitioning to the future Force Projection Army, a U.S.-based Army sending the forces forward. Airborne units and parachute riggers have operated on this premise for years. The parachute rigger is there in all conventional and nonconventional Rapid Deployment Forces (RDF) worldwide. The question most often asked by parachute riggers is "During the drawdown of the Army, will parachute riggers be cut significantly?" Based on current knowledge, the answer is "No" from the Airborne and Field Services Department, U.S. Army Quartermaster Center and School, Fort Lee, VA. In November 1992, total authorizations for military occupational specialty (MOS) 43E (parachute rigger) were 1,382 MSGs and below. Projections for FY 95 show authorizations declining to 1,343: a reduction of only 39 positions. This decline is minimal (approximately 3 percent when compared to the rest of the Army (30 percent).

Most 43E reductions will come from outside the continental U.S. (OCONUS) and table of distribution and allowances (TDA) units and activities. These reductions will also be a portion of the bill payer for the XVIII Airborne Corps Quartermaster Airdrop units being upgraded. Between now and 1996, the XVIII Airborne Corps should see an increase of approximately 47 43Es. The current and future status of riggers is primarily based on meeting the requirements of the future Force Projection Army for the RDF and the XVIII Airborne Corps.

Where Are the Master Sergeants?

Every year the Office of the Quartermaster General hears the same questions about the master sergeant promotion list. With today's forces being cut back, promotions are getting harder to come by. Soldiers are hitting the books harder than ever to increase their level of education and

looking for that job that others are refusing to take just to try to increase their chances of getting selected. These and other jobs seem to be of no avail. A recent message from the commander of the U. S. Total Army Personnel Command (PERSCOM) stated some facts about the outlook for future master sergeant promotions.

The message said the inability of PERSCOM to fill to 100 percent the top two senior NCO grades is grounded in federal statute. This restriction limits the combined SGM/MSG inventory strength from exceeding three percent of the total enlisted force and the SGM strength from exceeding one percent. The bottom line is that the Army has more MSG authorizations than can be filled because of the mandated cap.

The current SGM/MSG inventory is 2.93 percent of the total enlisted force. This fluctuates slightly depending upon when a snapshot of the force is taken. SGM are managed at 96 to 100 percent of authorizations, leaving MSG to be managed at approximately 88 to 90 percent of authorizations. Included are MSG in the Transients, Holdees, and Students (THS) account.

Currently, master sergeants are operating at about 1,300 less than authorizations require. To fill the especially large shortfall in first sergeant positions, PERSCOM is recommending frocking of promotable sergeants first class. PERSCOM is currently reviewing the new requirements for attendance at the first sergeants course and will keep the force posted on any changes.

The MSG shortage will likely continue as the Army continues to restructure. There may be light at the end of the tunnel as the Office of the Deputy Chief of Staff for Personnel (ODCSPER) plans to staff legislation in the FY 95 President's Budget asking that the cap be raised to 3.6 percent of the total enlisted force. If passed by Congress, this relief would allow PERSCOM to fill SGM/MSG positions to 100 percent.

Master Sergeant Board Analysis

MSG Patrick T. Patton, Sr.

The CY 93 Master Sergeant Board addressed five specific areas within Career Management Fields (CMFs) 77, 92 and 94. The five areas are competence, physical fitness, training and education, utilization and assignments, and performance and potential. Many comments can be applied generally to all three CMFs. Therefore, this discussion first covers general comments about the Quartermaster Corps, then addresses specifics of a CMF.

In the first area of competence, most Quartermaster soldiers possess technical knowledge and tactical skills. An average number of soldiers have pursued civilian education, and nearly all are attending required military schools. Overall, the records of soldiers in the secondary zone of consideration gave a stronger showing than soldiers in the primary zone, with the exception of military occupational specialties (MOSs) 57F (mortuary affairs specialist) and 57E (laundry and shower specialist).

Exceptions

Exceptions to the competence comments apply to MOS 92A (automated logistical specialist) and MOS 94B (food service specialist) where the board commented that tactical knowledge was marginal, possibly due to a lack of training opportunities.

Physical fitness was addressed next. Included here are the Army Physical Fitness Test (APFT), the Army Weight Control Program (AR 600-9), and the soldier's official military photograph. Overall, every CMF did well on the APFT. There were no two-time APFT failures. All CMFs had some overweight soldiers, with MOS 94B and MOS 92A having the most. It appears that some soldiers have benefited from the use of body fat standards that kept them competitive. However, some soldiers were in the weight control program for excessive periods of time (sometimes as much as three years) with no action taken by the commander. A possible integrity problem arises when the last five Noncommissioned Officer Evaluation Reports (NCOERs) are reviewed showing an increase in height (as much as four inches) proportionate to an increase in weight. The official military photograph played a significant role in the selection process. However, there are many outdated photographs, and some of very poor quality. Specific comments on soldiers with profiles at the SFC level indicated the profile could make it difficult for those soldiers to be leaders at MSG/1SG or higher levels.

Training and Education

The board then commented on training and education. Most soldiers had at least one year of college. Some otherwise excellent soldiers, however, had no civilian education beyond high school. A positive sign was the number of soldiers with extension and correspondence courses. However, many of those courses had nothing to do with their current MOS. Although many soldiers were seeking the 1SG and Battle Staff courses, CMF 94 was lacking in this aspect. In reference to utilization and assignments, all soldiers were working in their MOS. It was noted that too many soldiers selected for instructor/writer positions stayed in or returned to those positions. The effect of this is causing the soldier to lose touch with their primary MOS (PMOS) in the field, and lose valuable training and leadership opportunities. Soldiers seeking and obtaining leadership positions are enjoying tremendous success. Soldiers working in special assignments for extended periods of time needed to leave those assignments periodically to gain experience elsewhere, then return to those assignments. Assignments such as drill sergeant, recruiter and equal opportunity advisor were considered career-enhancing when completed successfully. However, the board recommended that soldiers return to their PMOS upon tour completion.

Specific comments about utilization and assignments were directed to CMFs 92 and 94. Some soldiers were assigned to one duty position such as platoon sergeant, but were working in something else such as range control NCO by choice of the NCO or unit. This may have hurt their

selection opportunity. Other soldiers transferred into CMF 92 as a SFC. This left a question of MOS qualification. The board recommended that NCOs avoid staying too long in enlisted aide positions. (The above recommendations to special assignments apply here.)

Performance and Potential

Performance and potential evaluations were considered crucial in determining the best qualified soldiers. Senior rater comments need to be specific in this area. Avoid expressions like "unlimited potential" and cliches. Rater bullets for blocks marked "Excellent" are still not reflecting the rating. This is deflating the value of the NCOER. Descriptions in the "Daily Scope and Responsibilities" section need to be specific referencing the soldier's job title and the number of soldiers supervised. Finally, discrepancies between the rater and senior rater sometimes are not adequately explained by the reviewer.

Other general comments about professional development noted that there were soldiers on temporary profile for extended periods of time without clearance by medical authorities for an alternate APFT or by a Military Medical Review Board (MMRB) for P-3 profiles.

Concern was voiced over airborne soldiers becoming stagnant at Fort Bragg, NC. This forces soldiers to lose the opportunity for diversity in their assignments, as well as not allowing other soldiers to serve at Fort Bragg. This was noted throughout the Quartermaster Corps. MOS 77F (petroleum supply specialist) was specifically commended in the quality of their records in comparison to the rest of the Quartermaster Corps.

The board's recommendations to the field include the following:

- Emphasize that the review of the NCO record is over time, not just what a soldier has done today.

- Encourage soldiers to obtain further military and civilian education, as well as seek out leadership positions.

- Stress the importance of attending Battle Staff and 1SG courses for the deserving/qualifying NCO.

- Stress the importance and specifics of the NCOER at NCO and officer courses and throughout the Quartermaster Corps.

MSG Patrick T. Patton, Sr., is currently Career Management Noncommissioned Officer, Career Management Field 94, Office of the Quartermaster General, U.S. Army Quartermaster Center and School, Fort Lee, Virginia.

Early Retirement Program

FY 94 will continue as a year of reshaping for the Army and the Quartermaster Branch. The Quartermaster Corps will share in the downsizing as authorizations for Quartermaster soldiers are reduced worldwide. To accomplish required end strength goals, the Army will primarily use the FY 94 early retirement program. The purpose is to provide a temporary management tool to reshape the Army. This authority will be used to retire members whose skills are excess to the Army's short-term and long-term needs. Not an entitlement, early retirement only will be offered to soldiers who meet strict eligibility requirements outlined in Military Personnel Message (MILPER) NR 93-223 and supplemental updates. (Your local military personnel office has copies of the MILPER message.) Only a few Quartermaster military occupational specialties are in the early retirement program. Interested soldiers should check with their MILPO or call the Quartermaster Branch at U.S. Army Total Personnel Command (PERSCOM) to get a listing of Quartermaster specialties and grades in the FY 94 early retirement program. Phone PERSCOM at DSN 221-2709/5923 or Commercial (703) 325-2709/5923.

Green to Gold

LT Andrew R. Horvath

Our enlisted ranks have a wealth of potential junior officers waiting to be discovered. Today's higher recruiting standards bring in more highly motivated, better educated, and goal-oriented soldiers. Our Army is full of people who can become outstanding officers. They have the desire and qualifications needed to make this transition, but lack the guidance to achieve this goal. Leaders must be aware of the various programs and opportunities available to soldiers for career progression.

Personal Experience

With that point in mind, I would like to discuss one option that future leaders may choose for a commission. It's called the Reserve Officers' Training Corps (ROTC) "Green to Gold" program. Five years ago, I chose the "Green to Gold" scholarship route to continue my education and to become an officer. While in the ROTC program, my previous four years of enlisted service helped me adapt to the ROTC leadership training. Along the same line, my enlisted experience gained as a unit supply specialist helped me tremendously during the Quartermaster Officer Basic Course. Finally, I feel my years as an enlisted soldier help me to understand, listen, and guide the soldiers that I lead.

Many Options

The "Green to Gold" program offers many options for active duty soldiers including two or three year scholarship packages at over 1,200 colleges and universities in the U.S. and Puerto Rico. This is a great opportunity for young soldiers to get a college degree and make their military

training pay off. In fact, they can receive college credits for many of the ROTC basic courses based solely on their prior service.

While enrolled in ROTC, students will continue to develop and fine-tune their leadership skills. ROTC scholarships are available to those who have completed at least two years of active duty and have been accepted by a college or university as a sophomore or junior. Normally, the application window for these scholarships is 1 December through 15 March.

Stay Competitive

Students may major in almost any area, but chances for a scholarship will be better if they major in science, engineering, business, or nursing. Again, as leaders we must encourage and assist the soldiers to continue their education while in the service so they can be competitive and qualified for this and other programs the Army has to offer.

Some soldiers may choose the nonscholarship route. They must enroll in a college that offers ROTC and may use their Army educational benefits for tuition costs. In some cases, they can join a local U.S. Army Reserve or Army National Guard unit and receive financial aid for drilling with that unit. A wide variety of financial aid is also available through most schools. Once in the program, they can still apply for a scholarship for the following year. In both cases, scholarship and nonscholarship, the soldier must be released from active duty and enroll in college full-time to participate in this program.

With both programs, there are monetary benefits. Each month that they are enrolled in ROTC, they will receive a tax-free allowance. They will also be paid for attending the six-week summer camp after their junior year. In addition, they will receive any educational benefits such as the GI Bill or the Army College Fund that they earned while on active duty.

After graduating from college and completing all ROTC requirements, they will be commissioned as second lieutenants and serve in the Active Army, the Army National Guard, or U.S. Army Reserve. Army career branch assignments are made according to individual desires and the Army's needs at that time. (Note: There are certain age limits that apply to this program. Nonscholarship cadets must be under 33 years of age and scholarship recipients must be under 29 years of age at the time of commissioning.)

For more information on the "Green to Gold" program, contact your post education center or the Professor of Military Science at the college or university listed for your installation.

LT Andrew R. Horvath is a graduate of the Reserve Officers' Training Corps program at Augusta College in Augusta, Georgia. He is also an honor graduate of the Quartermaster Officer Basic Course and has completed the Aerial Delivery and Materiel Officer and Airborne courses. He is currently assigned to the 25th Forward Support Battalion, 25th Infantry Division, Hawaii.

Quartermaster Professional Bulletin Objectives:

- Reinforce the training base.
- Reinforce skills.
- Introduce new concepts.
- Demonstrate the "how to."
- Provide a medium for professional dialogue.
- Stimulate professionalism.
- Encourage study and innovative thought.
- Provide a forum for commandants to communicate to the field.

QUARTERMASTER UPDATE

Branch Liaison Team Visits

The U.S. Army Quartermaster Center and School (USAQMC&S) at Fort Lee, VA, conducts Branch Liaison Team (BLT) visits to gather information from field commands on USAQMC&S graduates and fielded products and to update field commanders on current Quartermaster initiatives and issues. Visits are tentatively scheduled to the following locations pending available resources:

Location	*Dates*
Fort Campbell, KY	16-20 May 1994
Fort Riley, KS	23-29 May 1994
Fort Hood, TX	1-5 June 1994
Fort Stewart, GA	11-15 July 1994
Hawaii	To Be Determined (TBD)
Korea	(TBD)

FM 100-5 (Operations) Educational Package

The U.S. Army Training and Doctrine Command (TRADOC) has a three-part educational package with the latest version of FM 100-5 (Operations). The package contains a CD-ROM computer disk, a 35mm slide presentation with recommended script, and a VHS video tape.

The CD-ROM disk has both the 1986 and the 1993 versions of FM 100-5 (Operations), FM 100-1 (The Army), The U.S. National Security Strategy, and the U.S. National Military Strategy. The programs on the disk include three audiovisual animations explaining battle space; the dynamics between operational offense and defense, as illustrated in the Yom Kippur War; and the concept of simultaneous attack in depth, as represented in *Operation Just Cause.* Explanatory teaching points accompany each animation. The disk allows the user to perform a variety of research and word processing functions such as word search and split screen comparison.

The 35mm slide presentation and script explain the new FM 100-5 in terms of its new concepts, lines of thrust, and the strategic context in which it was developed. The VHS video gives the viewer historical insight into the production of keystone doctrine and its relevance to the U.S. Army as a strategic force for the 21st century. The initial distribution plan will send 1,200 copies of the CD-ROM disk and 650 copies of the VHS tape and slide presentation to the Active and Reserve Components.

Point of contact is LTC Pat Ritter in the School of Advanced Military Studies, DSN: 552-2138.

Senior Officer Logistics Management Course (SOLMC)

The SOLMC is specifically designed as a precommand refresher course for commanders and their primary staffs at the battalion and brigade level in the logistics arena. The one-week course is conducted several times each fiscal year at Fort Knox, KY. The course encompasses maintenance, supply and transportation procedures, as well as hands-on application in maintenance with vehicles, weapons, ammunition, medical equipment, communications, NBC equipment and common soldier support equipment. SOLMC complements all precommand courses (PCCs) by providing a detailed update on current logistics issues. The course is designed for all Army leaders in all branches and is open to officers in the grade of major and above in the Active and Reserve Components, and to DOD civilians in the grade of GS 11 and above.

Class quotas may be obtained through normal TRADOC channels. For more information contact CPT Lee or CPT Higdon, DSN 464-7133/3411.

Course Schedule

SCH 171			CRS 8A-F23		
FY 94			**FY 95**		
94-03	5-10	Dec 93	95-01	16-21	Oct 94
94-04	2-7	Jan 94	95-02	13-18	Nov 94
94-05	13-18	Feb 94	95-03	4-9	Dec 94
94-06	20-25	Mar 94	95-04	8-13	Jan 95
94-07	17-22	Apr 94	95-05	12-17	Feb 95
94-08	15-20	May 94	95-06	19-24	Mar 95
94-09	19-24	Jun 94	95-07	16-21	Apr 95
94-10	24-29	Jul 94	95-08	14-19	May 95
94-11	21-26	Aug 94	95-09	18-23	Jun 95
94-12	18-23	Sep 94	95-10	16-21	Jul 95
			95-11	20-25	Aug 95
			95-12	17-22	Sep 95

Hazardous Technical Information Services (HTIS)

HTIS is a technical support function, operated by the Defense Logistics Agency (DLA), that provides professional consultation services, free of charge, to Department of Defense (DOD) personnel worldwide. HTIS focuses on preventing occupational illness/injury and on protecting the environment by providing information on the management of hazardous materials. HTIS responds to questions by DOD on safety, health, transportation, storage, handling, regulatory, disposal, and environmental considerations of hazardous materials and wastes.

Services are not restricted to DOD. Other Federal agencies may use HTIS if an item in question was formerly DOD-owned or managed. HTIS publishes a quarterly bulletin designed to keep DOD personnel informed of current technical and regulatory developments, as well as education and training related to hazardous materials and waste.

Telephone HTIS at DSN 695-5168, Commercial (804) 279-5168 or 1-800-848-HTIS. A professional in chemistry, chemical engineering, industrial hygiene, or environmental science will respond.

19th Annual Culinary Arts Competition

Army culinary teams will compete at Fort Lee, VA, 1-10 Mar 94. Teams are expected to arrive by the end of February, with the field cooking competition beginning 1 March and running through the 3rd. A representative from each team will compete in the live cookery events of Chef of the Year and Junior Chef of the Year on the 3rd and 4th, respectively. Meanwhile, teams prepare for the static exhibits which will be judged 9 March and open for public display that evening and the next day at the Fort Lee Officers and Civilians Club. The competition ends with an awards ceremony 10 March. Culinary medals will be given to individual winners and trophies to the winning teams.

An educational component for the competitors will be added this year with culinary and nutrition demonstrations.

Packaged Water

The latest concept in packaged water (PW) is a transportable Packaged Water Combat Service Support (PWCSS) system. With the PWCSS system, PW is distributed by using the Class I (rations) and II (general supplies) supply systems. The PWCSS system supplements current field water supply systems and will not replace any fielded water support equipment. The system and accompanying packaging material and equipment can be transported in vehicles organic to Army water units such as a 5-ton cargo truck, 1 1/2-ton trailer, and a high mobility multipurpose wheeled vehicle (HMMWV), or on a palletized loading system flatrack. The water packaging equipment uses standard U.S. Army power sources.

The PWCSS system supports units involved in low intensity conflict (LIC) environments, contingency operations, special operations, and other operations that must distribute potable water to isolated units without depending on host nation bottled water.

The water treatment specialist (military occupational specialty (MOS) 77W) and the Quartermaster and Chemical equipment repairer (MOS 63J) operate the PWCSS system. These soldiers will operate and maintain water packaging equipment at organizational levels and above. Established Quartermaster water purification points and water supply and distribution points have the packaging and distribution responsibilities throughout the theater of operations during both war and peacetime. Under battlefield conditions, water will generally be packaged in the corps area with the potential of packaging as far forward as the brigade support area.

At least one set of water packaging equipment will be employed by corps and echelons above corps water elements, Quartermaster supply companies (direct support), and water supply companies (general support). The PWCSS system will make up to 100 percent of the potable water during the deployment phase (in place of bottled water), then from 5-10 percent of total potable water during the lodgment and buildup phases in support of contingency/special operations and LIC environments. The PWCSS system is multi-environmental and can be employed in various geographical areas around the world. The containers in the PWCSS system are biodegradable. Soldiers in isolated and fast-moving maneuver units will not have to carry empty containers, but will bury the empty disposal containers.

Food Service Officers' Guide

The Army Center of Excellence, Subsistence, U.S. Army Quartermaster Center and School, Fort Lee, VA, has produced a guide to assist installations in providing training for new food service officers. These guides are BDU-pocket sized, simple to use, and cover both field and garrison operations. Copies were provided to installation food advisors, but if you have not received one, call SFC Gregory Barrell at DSN 687-7148 or Emily Prior at DSN 687-7125.

Operational Ration Heating Chemical Disposal

Recently a question surfaced about proper disposal of chemical heating devices for the operational rations. The Department of Defense Hazardous Materials Information System provided the information that follows.

The Army currently uses a trioxane compressed fuel from two different manufacturers and the flameless ration heater (FRH).

- Trioxane (Celanese Engineering Resins Division, Celanese Corporation)

•• Fire and Explosion Hazard Data: The flash point is 30.2F. Wear self-contained breathing apparatus and use carbon dioxide, dry chemical foam or water spray to extinguish fires.

•• Precautions for Safe Handling and Use: For spills, remove all sources of ignition, sweep material up into dust pan and incinerate. Thoroughly ventilate the contaminated area and use dust mark during clean up. **Dispose of waste fuel in chemical incinerator, according to federal, state, and local regulations.**

• Trioxane (Van Ben Industries)

•• Fire and Explosion Hazard Data: The flash point is 113F. Use NIOSH-approved, self-contained breathing apparatus and full protective equipment when fighting chemical fires. Use water spray to cool nearby containers exposed to fire. To extinguish the fire, use carbon dioxide, foam, dry chemical, or water fog.

•• Precaution for Safe Handling and Use: If material is released or spilled, remove sources of ignition, ventilate the area, place in tightly closed containers pending disposal and handle as though it were a spilled combustible liquid. **Waste disposal will be per local, state, and federal regulations.**

• Flameless Ration Heater (FRH) (Truetech, Inc.)

•• Fire and Explosion Hazard Data: The flash point of this product is not applicable. If detected early, large quantities of conventional extinguishing media intended for Class "A" fires may be used. If a case of FRH is ignited, paperboard and polyethylene packaging will burn initially as a Class "A" fire. If allowed to burn, it will become a Class "D" fire. If the magnesium powder ignites, the material will spark and flare up if sprayed with water. Even if fire is extinguished by water, burned FRH produces H2 gas.

•• Precautions for Safe Handling: If spilled, collect spilled FRH and inspect polyethylene bags for ability to prevent water penetration. If bag is cracked or punctured, dry and dispose of as a waste. If bag is intact, dry and repackage. Reacted FRH may be disposed of as ordinary waste. Unreacted FRH may be opened and activated with water according to instructions, then disposed of as ordinary waste, or incinerated in an approved waste facility.

Armed Forces Recipe Revision

The Armed Forces Recipe Service Committee implemented revisions of TM 10-412 (Index of Recipes; Armed Forces Recipe Service) to reduce fat, sodium, cholesterol and calories. The revision includes approximately 1,310 recipes. The U.S. Army Quartermaster Center and School menu developers have incorporated new and revised recipes from this revision, beginning with January 1994 SB 10-260 (Master Menu). The use of these recipes will help to achieve standards of AR 40-25 (Nutrition Allowances; Standards and Education), calling for more stringent levels for fat and cholesterol in the diet.

Fuels/Petroleum Interservice Training Review Organization (ITRO) Update

LT John L. DeCarolis, Supply Corps, U.S. Navy, U.S. Army Quartermaster Center and School Navy Liaison

The Army Petroleum Officer's Course (8B-92F), which is currently taught to Army, Navy, and Marine Corps petroleum specialists, is on the way to becoming a totally joint-service course. This evolution in the Petroleum Officer Course (POC) came as a result of the Interservice Training Review Organization (ITRO). ITRO is a review board of representatives from the four services.

ITRO is tasked with reviewing Department of Defense technical training. ITRO searches for commonalities and seeks to find ways to combine training to reduce costs. With the petroleum community, ITRO Phase I sought to identify commonalities, feasibility, and cost-effectiveness of consolidating/colocating fuels/petroleum training (curriculum, facilities and staff). One course noted for commonalities/potential joint service applications was the Army's POC.

Cost Savings

ITRO Phase II calculated costs associated with the findings noted from ITRO Phase I. Armed with both a mandate and potential cost savings, representatives of all services met 17 Aug 93 to review the POC curriculum, agree on curriculum content, and establish areas of responsibility. With all services agreeing on course curriculum, service representatives are reviewing selected POC lesson plans to provide the most up-to-date guidance for future instruction. Future developments such as ITRO Phase III will see actual execution and implementation when POC becomes an all-service course.

Specifically, POC will be structured towards the following:

• Army 92F captains (currently attend)

• U.S. Navy/U.S. Marine Corps petroleum interns/specialists (currently attend)

• U.S. Air Force 0-3 (promotable) and above going to joint staff duty as petroleum specialists*

• Senior U.S. Army/U.S. Navy/U.S. Marine Corps officer and civilians with prior petroleum experience may also attend for refresher purposes*

* NOTE: These two communities will attend the first two weeks of the training. The first joint-service POC is projected to begin 9 Jan 95.

ITRO Phase I also determined that there was a commonality between the Army Petroleum Laboratory Specialist Course and the Air Force Fuels Quality Control Course. ITRO Phase II considered the options of consolidating the training at the U. S. Army Quartermaster

Center and School, Fort Lee, VA, or at Sheppard Air Force Base, TX. The study concluded that consolidating the Air Force and Army training at Fort Lee was the only cost-effective option. The first class for the joint-service course is projected for FY 95.

Petroleum will continue to be an area of immense importance for years to come. The need for petroleum training, therefore, is integral to the future of defense logistics and will continue to be a keystone of logistics efforts and training.

Army Field Feeding System-Future: An Update

CW4 Samuel P. Galloway

A study of the Army Field Feeding System (AFFS) began in March 1991. The goal was to improve the present AFFS to meet future demands and improve conditions for soldiers in the field. The study concluded on 2 Jun 92 when the Chief of Staff of the Army (CSA) approved two key recommendations:

- Establish an Armywide policy to give the commander the capability to distribute, prepare and serve one cook-prepared meal (A-/B-Rations) daily, versus one every third day, based on mission, enemy, terrain, troops and time available (METT- T).

- Conduct field trials of the study's concepts to determine if the recommended fixes to support the new policy were correct.

The Army Field Feeding System-Future (AFFS-F) concept of feeding an A-/B-Ration daily drives changes in policy, doctrine, personnel, equipment, training, rations and Class I distribution. These changes include the following:

- Placing a food service technician back into each separate brigade, regiment and divisional brigade-sized unit to assist the commander and manage brigade food service support.

- Adding three food service specialists to current maneuver battalion staffing of Armor and Infantry divisions, separate brigades, and regiments.

- Upgrading food service equipment to enhance the capability to support the soldiers forward by:

•• Assigning a Kitchen, Company Level Field Feeding-Enhanced (KCLFF-E) staffed by two food service specialists to support company forward feeding requirements METT-T dependent.

•• Adding a high mobility multipurpose wheeled vehicle (HMMWV) as the prime mover for the KCLFF-E in maneuver units.

•• Replacing the Mobile Kitchen Trailer (MKT) and the Mess Kit Laundry Lines with state-of-the-art Containerized Kitchens (CKs) and Sanitation Centers (SCs).

- Unitizing A-/B-Ration meals into modules called United Group Rations (UGRs) to reduce the number of separate line items handled by Class I and food service personnel, upgrade the quality of field menus, and make better use of off-the-shelf commercial products.

- Changing the Class I distribution system to support the AFFS-F concept by adding an automation program and additional subsistence handlers to distribute subsistence.

Field Trial Schedule

Units from the XVIII Airborne Corps and the 49th Armored Division (Texas Army National Guard) were selected to participate in the validation/demonstration of the AFFS-F concept. Four field trials were scheduled and completed as follows:

82d Airborne Division
7-20 Dec 92
(3,660 soldiers supported in NC)

24th Infantry Division (Mechanized)
12-25 Mar 93
(4,853 soldiers supported in GA)

101st Airborne Division (Assault)
12-25 Apr 93
(3,758 soldiers supported in KY)

49th Armored Division (Texas Army National Guard)
12-28 Jun 93
(2,600 soldiers supported in TX)

The Directorate of Combat Developments (DCD), U.S. Army Quartermaster Center and School (USAQMC&S), Fort Lee, VA, had the lead in conducting the field trials. DCD established an independent evaluation effort called Army Feeding System- Future Concept Evaluation Program Data Collection Effort (AFFS-F CEPDCE). Before each field trial, units/personnel participating in the validation of the AFFS-F concept were provided the necessary equipment, personnel, training, subject matter experts (SMEs), and Class I and food service personnel.

During the field trials, SMEs were assigned at each food preparation/feeding site. Data collection forms were

completed after action reviews were conducted for battalion-level leadership and food service specialists, and division user reports were prepared. DCD personnel collected and compiled all data for automated analysis. The concept worked. It was strongly supported from the field, and it supported the forward field feeding mission.

An Executive Summary Brief of the Field Trial Results and Implementation Plan was prepared by DCD and the Army Center of Excellence, Subsistence, USAQMC&S. It is now being briefed to the Department of the Army staff. Decisions will be made on how to properly address issues noted during the field trials. Action officers are working out the specifics on the timelines for proper implementation of AFFS-F to the force structure. When their actions are complete, the field will be officially notified.

While those actions are ongoing, the USAQMC&S is organizing contact teams to go back to the field and brief the corps/division commanders, and senior leaders on the current status of AFFS-F. The AFFS-F concept upgrades the commander's capability from one A-/B-Ration meal every third day to one A-/B-Ration meal daily (METT-T dependent). It provides the flexibility needed to get the right meal at the right place at the right time.

CW4 Samuel P. Galloway is Chief of the Army Field Feeding System Task Force, Army Center of Excellence, Subsistence at the U.S. Army Quartermaster Center and School, Fort Lee, Virginia. His military education includes the following courses: Warrant Officer Senior, Food Advisor, Club Management, Inspector General, Contracting Officer Representative, and Instructor Training. His duty assignments include tours in Korea, Germany and Vietnam. His most recent overseas assignment was with the U.S. Army, Korea, as a Food Advisor, 2d Infantry Division.

Logistics in the Polish Army

LT Mariusz Minda

Logistics is the process of managing the chain of supplies and services for fighting forces and the knowledge of commanding logistics units. Most important, the chain of supplies and services must be provided efficiently at the right time, with the right quantities, with the right qualities and in the right place.

At the operational level, the logistics system consists of supply, transportation, maintenance and medical service. The element bringing them together is the logistics staff. The staff's tasks are planning, organizing, actuating and controlling.

Nowadays, logistics concepts in the Polish Army take into account the structures of the military logistics system at the different levels from headquarters to company. These structures must provide constant supplies and services. In addition, the structures have to be elastic. It means they should be flexible enough to work both in peacetime and wartime, and they must accomplish the mission during warfare.

In all organizational structures of military logistics systems the logistics staff is very important, dealing with coordinating activities within the system. The staff's other task is commanding logistics units.

According to present logistics concepts in the Polish Army:

- Supply service will be engaged in all kinds of supply except for the medical service which will supply itself with medical equipment.

- Medical service will be engaged in medical support on the battlefield. The current concept assumes the introduction of the "area model." This means that medical aid will be given to any soldier who is within the area.

- Maintenance service will be engaged in providing repairs and services for all kinds of equipment.

- Transportation service will be engaged in organizing military transportation, regulating traffic and maintaining roads.

Except for the organizational structures, certain steps must be taken to establish optimal logistics in the Polish Army. Using computers and suitable programs will be very helpful in taking technological steps.

Also, establishing logistics in the Polish Army will be related to changing division structure into brigade structure. This will take some time.

Expected results must reflect high efficiency in getting supplies and services to fighting forces. The whole process means increased costs to the Polish Army, necessary because modern forces are not able to conduct efficient battles and operations without a good working logistics system.

LT Mariusz Minda, a November 1993 graduate of the last Quartermaster Officer Advanced Course at Fort Lee, Virginia, studied in the Military Academy of Technology in Warsaw, Poland, for five years and was graduated with a master's degree in meteorology in 1988. His first assignment in the Polish Army was Platoon Leader at the Ordnance School in Olsztyn. Next, he was in the 55th Antiaircraft Regiment in Szczecin and also was an Instructor in the Ordnance School.

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240th Quartermaster Battalion operated Class I depot near Marseille, France, November 1944

240th QUARTERMASTER BATTALION

LINEAGE

Constituted 13 January 1941 in the Regular Army as the 240th Quartermaster Battalion

Activated 1 June 1941 at Camp Livingston, Louisiana

Reorganized and redesignated 16 June 1942 as the 240th Quartermaster Service Battalion

Battalion broken up 15 February 1944 and its elements reorganized and redesignated as follows:

Headquarters and Headquarters Detachment as Headquarters and Headquarters Detachment, 240th Quartermaster Battalion

Companies A - D as 3250th - 3253d Quartermaster Service Companies, respectively -- hereafter separate lineages

Headquarters and Headquarters Detachment, 240th Quartermaster Battalion inactivated 22 November 1945 in France

Activated 1 June 1966 at Fort Lee, Virginia

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