Ordnance Corps
Bicentennial
1812-2012

Headquarters, Department of the Army
Approved for public release; distribution is unlimited.
Army Sustainment

OPERATIONAL RISK MANAGEMENT—Major Jeremiah O’Connor

ARMY RESERVE EXPEDITIONARY RAILWAY CENTER—Colonel Davie T. Pollard, USAR

MILITARY CULINARY ARTS COMPETITION 2012—Staff Feature

HEADLINES

FOCUS

Redefining Sustainment Priorities in an Era of Change
—Major General James L. Hodge

The State of the Ordnance Corps on Its Bicentennial
—Brigadier General Clark W. LeMasters, Jr.

The History of Ordnance in America—Karl Rubis

LOGISTICS MOVEMENTS IN A CHANGING AFGHAN ENVIRONMENT
—Captain Owen A. Rose

THE CSSB CHALLENGE: DOING MORE WITH LESS
—Major Thomas W. Haas

MOVING LIQUID GOLD—Major Jonathan McDougall

BOAT TO PLANE TO FOXLIFE: SEVEN KEY STEPS TO INTERMODAL OPERATIONS—Captain Christopher Sheehan

WARRIOR LOGISTICS SCHOLAR SEMINAR: THE ULTIMATE LEadership Course for Field-Grade Logisticians
—Major Travis J. James

WHAT “SHON BA SHONA” MEANS TO ARMY LOGISTICS
—Captain Michael D. Andersen

THE COMPLETE EXCHANGE OF AN MRAP FLEET DURING SUSTAINABILITY OPERATIONS—Captain George Autry

THE 87TH QUARTERMASTER DETACHMENT’S JOINT AERIAL OPERATIONS IN OKINAWA—Captain April A. Campise and Sergeant Terrance J. Alvarez

THE THREE MOST COMMON ELECTRICAL SAFETY ISSUES IN DEPLOYED ENVIRONMENTS—James F. Jennings

LOGISTICS AND ANALYSIS IN THE SCIENCE OF WAR
—Captain A. Harvey III

A ROAD TO WAR FOR RECONNAISSANCE SQUADRON FORWARD SUPPORT COMPANIES—Captain Jeremy P. Brown

“FUELING THE TEAM” FOR BETTER HEALTH AND PERFORMANCE
—Bill Roche

ABOUT THE COVER

Cover: The Ordnance Corps celebrates its bicentennial on 24 May. Building on a proud heritage of 200 years of service to the Nation, the men and women of today’s Ordnance Corps provide maintenance, ammunition handling, and explosive ordnance disposal (EOD) support to warfighters around the world. The articles beginning on pages 4 and 8 look at the present and the past of the Ordnance Corps. In the cover photos (clockwise from the upper left), an Ordnance Soldier uses a forklift to move munitions at Joint Base Balad, Iraq; a mechanic reattaches hoses and wires in a generator after an engine is replaced at Camp Liberty, Iraq; an EOD Soldier prepares a generator after an engine is replaced at Camp Clark, Afghanistan; the 87th Quartermaster Detachment’s Joint Aerial Operations in Okinawa; and a ISOS team members is deployed environments. James F. Jennings
Refining Sustainment Priorities in an Era of Change

BY MAJOR GENERAL JAMES L. HODGE

In 1963, John F. Kennedy observed, “Change is the law of life. And those who look only to the past or present are certain to miss the future.” This statement applies to the Army as much as it does to any other governmental agency; after a decade of war, it should be no surprise that the Army is posturing itself, yet again, for significant adjustments to the force.

The war in Iraq has come to an end, and nearly all of the equipment retrograded back to Kuwait has been shipped from the theater or incorporated into prepositioned stocks. We are also decreasing our force presence in Afghanistan and beginning the transition toward a security and assistance mission.

In light of this changing operational environment and anticipated force reductions, the sustainment community is now presented with a unique opportunity to closely evaluate our organizational structure, doctrine, and training strategy to provide an agile sustainment force posture to meet future sustainment requirements.

Improving Energy Use and Doctrine

In the past two issues of Army Sustainment, I highlighted two supporting efforts in our strategy to continue “learning forward” in anticipation of future requirements: Operational Energy and Doctrine 2015. The operational energy initiative will capitalize on capabilities developed by the industrial sector to reduce our overall energy use. This will extend the operational reach of maneuver force commanders by reducing their overall sustainment requirements and reducing the need to “stockpile” resources within easy reach.

Similarly, the restructuring of our doctrine, in accordance with the Army Training and Doctrine Command’s Doctrine Reorganization initiative, will provide flexible publications that we can adapt over time as we continue to learn as an Army.

Two other ongoing programs complement these initiatives as we bake the sustainment force: the ongoing force design review process and the Army Learning Model 2015 program.

Restructuring to Meet Future Requirements

The Army of 2020 must be postured to prevent conflict, shape the environment, and, most of all, decisively and dominantly win our Nation’s wars. In order to do this, we must all take the lessons learned from the past decade of conflict and mesh them with the need to meet the hybrid threat of the future while remaining operationally adaptable as codified in Army Doctrine Publication (ADP) 3-0, Unified Land Operations. This operational adaptability must enable us to respond to not only military actions but also to humanitarian disasters and security risks as they emerge throughout the world.

In understanding that the Army of 2020 is going to be a leaner and more agile organization, we must refine the sustainment force to ensure that our resources are positioned to provide the greatest flexibility to the maneuver force commander. As defined in ADP 3-0, our goal must always be to ensure freedom of action, extend operational reach, and prolong endurance.

In reshaping the force, we must continuously reassess how we have our forces and our equipment assets arrayed and at which echelon to best meet the Nation’s defense strategy. For example, the Army’s current tactical wheeled vehicle fleet is out of balance with its requirements. As the Army wrestles with a reduction in vehicles, we must do so in an orderly fashion while ensuring that we have sufficient modernized assets to meet the distribution requirements in 2020 and beyond.

In addition to ensuring that our modernization strategy is sound, we will also seek to increase capabilities by providing organic convoy protection platforms to many of our formations. Modernizing the fleet while increasing existing capabilities, and doing so in an era of diminishing resources, is a tall order, but I have every confidence that we can accomplish this and more.

As we reshape the force, we also have an opportunity to align some of our sustainment force structure to minimize the turbulence caused by the over-modularization of certain capabilities. As we have observed over the years, our force structure provides tremendous flexibility but often with the expense of increased turbulence and friction. For example, the typical sustainment brigade experiences an average of 14 relief in place/transfer of authority actions a month when deployed.

By aligning some capabilities within our combat sustainment battalions and sustainment brigades and synchronizing their deployment timelines, we can reduce that turbulence. The alignment of these units and capabilities will improve mission command and training and command relationships with supported organizations, both in garrison and while deployed.

Enhancing Soldier and Leader Skills

As we reshape and build the organizations of the future, we cannot understate the importance of reassessing our systems for developing the necessary skills in our Soldiers and leaders to meet the hybrid threat. The Army Learning Model (ALM) 2015 has been developed to meet these challenges and develop our future fighting force.

ALM 2015 is a student-centric system that will identify the needs of the individual learner and develop a career-long learning approach that combines training, education, experience, and access to increased self-development tools. This program, enabled by available technology such as mobile applications, will help increase our capacity to learn faster and adapt quickly. Assess-adapt-learn is the principle that we will use to guide our efforts in implementing this new program.

Assessments are conducted at the onset of a training cycle as well as throughout the training to help tailor instruction to the learners’ needs and experience and allow Soldiers to test out of instruction they have already mastered. These ongoing assessments are a key enabler of the core element of ALM 2015: the ability to adapt training to the needs of the individual.

Adaptability is truly the central idea of ALM 2015. The ability to develop realistic, tailored, and continuously adaptable training to meet the needs of individual students and small groups is paramount to improving our educational processes. Gone are the days of “death by PowerPoint” instruction, replaced by analysis of complex scenarios designed to enhance teamwork, adaptability, and critical thinking skills. Instructors must be able to facilitate discussion in a small-group setting to maximize the sharing of information and increase peer-to-peer learning (a hallmark of the experiential learning model espoused in ALM 2015).

The final principle, learning, is something we all need to impart to our Soldiers and leaders at every level. We must all recognize that learning is a continuous adaptive process, not one that exists only when a Soldier is sent to the advanced leaders course or captures career course. Learning must be integrated into everything Soldiers do at each level of their careers.

By leveraging developmental assignments, civilian educational opportunities, professional readings, and distributed learning opportunities for our Soldiers, we are working to create a self-directed learning capability that can be integrated into an individual Soldier’s personal professional development plan. This will allow for the continuous learning environment necessary to ensure that we maintain the best trained fighting force.

Change is inevitable, more so in the Army of today than in any other time in the recent past. Living in a time of change can be challenging. However, change can also open up tremendous opportunities to reshape the Army to meet the demands of the future.

As leaders, we have the responsibility to stay abreast of the latest information to ensure that we meet the needs of our Soldiers and our Army. By embracing a learning continuum, tailored to the individual Soldier, we will continue to become more efficient in everything we do, from the delivery of needed resources to sustain our fighting force to how we train our Soldiers and our leaders.

MOJAR GENERAL JAMES L. HODGE IS THE COMMANDING GENERAL OF THE ARMY COMBINED ARMS SUPPORT COMMAND AND SUSTAINMENT CENTER OF EXCELLENCE AT FORTE LEE, VIRGINIA.
The State of the Ordnance Corps on its Bicentennial

by Brigadier General Clark W. LeMasters, Jr.

Greetings from the Home of Ordnance! This year is the Ordnance Bicentennial celebration, and after it has “answered the call for 200 years,” I’m proud to bring you a short update on the state of your Ordnance Corps. The Ordnance Corps has evolved over the years, and our current mission statement is as follows: Trains Ordnance Soldiers and leaders in technical skills, values, common tasks, and the Warrior Ethos. Supports development of capabilities across Doctrine, Organization, Training, Materiel, Leadership, and Facilities (DOTMLPF), supporting our core competencies and the Army’s mission. Supports the Army’s enlisted and officer accession mission.

Across our core competencies of maintenance, ammunition, and explosive ordnance disposal (EOD), the Ordnance Corps is composed of an Active Army, Army National Guard, and Army Reserve force of more than 105,000 Soldiers; that is more than one-third of the total Army. The bulk of our force is focused on maintenance, sustainment force and 11 percent of the total Army. The Ordnance Corps is composed of an Active Army, Army National Guard, and Army Reserve force of more than 105,000 Soldiers; that is more than one-third of the total Army. The bulk of our force is focused on maintenance, sustainment force and 11 percent of the total Army.

The base closure and realignment (BRAC) move to Fort Lee, Virginia, supports the Global Anti-Terrorism and Operational Readiness (GATOR), Post Blast, and EOD Advanced Leaders Courses. The base closure and realignment (BRAC) move to Fort Lee, Virginia, supports the Global Anti-Terrorism and Operational Readiness (GATOR), Post Blast, and EOD Advanced Leaders Courses. The Samuel Sharpe Dining Facility (DFAC) supporting the Ordnance campus is the largest Army-owned DFAC and provides outstanding-quality food that can feed the entire Ordnance School of over 3,200 students in a 90-minute period. Your Ordnance Soldiers live in first-rate barracks designed around two companies sharing one building, separated and organized across the two campuses sharing one building, separated and organized across the two battalions of the 59th Ordnance Brigade.

Ordnance Corps Priorities

The Ordnance School team works hard to leverage the latest technology to update our programs of instruction (POIs), lesson plans, training support materials, and doctrinal publications to support a continuum of learning. Our training is focused on providing the background and environment for Ordnance CorpsSoldiers and leaders to live up to the Ordnance Creed and provide support to the Army across the full spectrum of operations. The current Ordnance Corps priorities are as follows:

- Army Training and Doctrine Command (TRADOC) accreditation. The TRADOC accreditation team visited Fort Lee to evaluate the Army Combined Arms Support Command’s (CASCOM’s) four training institutions (the Ordnance, Quartermaster, and Transportation School and the Army Logistics University). The purpose of the visit was to evaluate professional, coaching, mentoring, and teaching standards. Attaining the accreditation standards means that the institution’s training prepares Soldiers and leaders to perform their technical Ordnance mission to support the Army.

- The TRADOC accreditation team visited the Ordnance School from 16 to 22 March. The evaluators observed training activities, key-person interviews and focus groups, surveys, written questionnaires, and record and document reviews.

- Army Learning Model 2015. The learning model consists of a Common Core Curriculum that begins when an individual joins the Army and does not end until retirement. The learning model enhances the rigor and relevance of individual learning and delivers multiple learning stimuli to reach audio, visual, and kinesthetic learners. It maximizes opportunities to master fundamental competencies and develops critical thinking skills that all Soldiers must master.

- Components of the initiative include learner-centered instruction, technology integration, lifelong learning, student assessment, peer-to-peer learning, trade certification, and leader development programs. As the Army moves forward with this learning strategy, the lines between the Army Learning Concept and the Army Training Concept will merge into one effort to ensure that our Soldiers are provided relevant, pointed training that will prepare them for any contingency. The value of instructional expertise and training development is important to the Army Forces Command (FORSCOM) commanders as it is to TRADOC’s centers of excellence.

- Skills-based training (SBT). This training marks a shift from the “remove and replace” mentality to a “creating critical thinkers and diagnosticians” one. SBT is a principles-based, diagnostics-driven methodology, based on the science of learning, that seeks to provide Soldiers with the skills they need to isolate and identify components that are inoperative, out of alignment, or malfunctioning to a precise degree of accuracy. Tasks are based on problem solving and not on equipment specifics. Of the 25 initial military training courses taught at the Ordnance School, 5 have converted and 2 are in the process of converting to SBT.

- The Ordnance Campaign Plan (OCP). The OCP describes Ordnance Corps actions to support and implement campaign objectives and major tasks articulated in the Army Campaign Plan and supporting the TRADOC and Army Training and Materiel Campaign plan. The OCP also serves as a staff management tool to track ongoing initiatives associated with maintenance, ammunition, and EOD in the Ordnance School.

- The OCP provides the visibility and metrics to ensure that all Ordnance Soldiers possess the right capabilities to support today’s force. But it will also help us guide the ORSCOM forward. How do we grow the 2020 force with the right mix of common and technical skills, values, and Warrior Ethos across all DOTMLPF domains to support our core competencies and the Army’s mission. TRADOC initial military training initiative. The TRADOC Deputy Chief of Staff for Initial Military Training (DCG−IMT) has an initiative to ensure that all IMT courses are current and relevant and incorporate the latest training methods and technologies. To ensure that Soldiers and junior leaders are prepared to contribute at their first units of assignment, the IMT centers of excellence are directed to:

- Review all POIs on a regular basis to ensure that training is relevant, rigorous, and standardized.
- Direct the training and development of IMT cadre.
- Direct the development of common core tasks.
- Enable the resourcing of subordinate units.
- Capture and share lessons learned across the centers of excellence and IMT brigades.
- Assist IM brigades to improve the quality of life and resilience of cadre, families, and civilians.

In support of the TRADOC initiative, CASCOM and the Ordnance School completed a review of critical tasks for each Ordnance military leader development specialty in February 2012. In April, CASCOM and the Ordnance School started reviewing POIs and lesson plans with the DCG−IMT’s “Tiger Team.” In July, the Ordnance School will present the results of the review and our recommendations to the DCG−IMT. The CASCOM Training Directorate plays a major role in this process, but the Ordnance School has this Doctrinal

- Doctrine 2015. Seven Ordnance publications are currently being written or updated. The projected publication dates for these publications are as follows:

  - ATP 4−33, Maintenance Operations: Third quarter, FY 2012.
  - ATP 4−32, EOD Service and Unit Operations: Third quarter, FY 2013.

- Ordnance Corps Bicentennial Celebration. We have planned for a full schedule of events to celebrate the bicentennial anniversary of the Ordnance Corps. The date of the event is being finalized, but it will be held at Fort Lee on 16 to 18 May. I invite each of you to join us for this first class event, which will provide an opportunity for the Ordnance community to gather at the new, state-of-the-art Home of Ordnance to learn what is on the
The History of Ordnance in America

On 14 May, one of the Army's oldest branches celebrates 200 years of service to the Nation.

The Ordnance branch is one of the oldest branches of the Army, established 200 years ago. However, the duties and responsibilities of the Ordnance profession date back to 1629, when the Massachusetts Bay Colony appointed Samuel Sharpe as the first Master Gunner of Ordnance.

Just 16 years later, in 1645, Massachusetts Bay had a permanent Surveyor of Ordnance. His responsibilities were to deliver powder and ammunition to selected towns, recover weapons from militia members, receive periodic reports from government officials to guide the payment from those who lost weapons, and provide a permanent Surveyor of Ordnance. His responsibilities date back to 1629, when the Massachusetts Bay Colony appointed Samuel Sharpe as the first Master Gunner of Ordnance.

In 1645, Massachusetts had colonial Ordnance personnel moving with them. These men, civilians and Soldiers, served as conductors of a traveling forge for maintenance, an ammunition wagon, and an arms chest. Each conductor led a section of five to six armorers who repaired small arms.

The Continental Congress' Board for War and Ordnance created the Commissary General for Military Stores to establish and operate Ordnance facilities in an effort to alleviate the infant nation's dependence on foreign arms purchases. Colonel Benjamin Flower led the comissary from his appointment in January 1777 until his death in May 1781. Ordnance facilities were established at Springfield, Massachusetts, and Carlisle, Pennsylvania, for the production of arms, powder, and shot.

After the war, the sustenance elements were disbanded and the authority for procurement and provision of all things military was transferred to the Office of the Purveyor of Public Suppllies, which was located in the Treasury Department.

The Early Republic

In the first half of the 19th century, the Ordnance Department played a crucial role in the burgeoning Industrial Revolution and helped to establish the American System of Manufacturing. One of the most significant achievements was the establishment of Federal armories at Springfield, Massachusetts, in 1795 and Harpers Ferry, Virginia (now West Virginia), in 1798. Under congressional legislation of 1794, each armory was staffed by a civilian superintendent and a master armorer.

The two armories served as a nucleus for technological innovation in the young republic. Inventors such as Eli Whitney and Simeon North developed the methods and means for mass production through the use of interchangeable parts and refined technology in milling machinery.

By the dawn of the War of 1812, the Secretary of War recognized the need for a distinct branch to manage the procurement, research, and maintenance of ordnance materiel. Deцияus Wadsworth, previously superintendent of the United States Military Academy at West Point, New York, was appointed a colonel and given the title Commissary General of Ordnance (later changed to Chief of Ordnance). His ambition during the war years and afterward was to simplify and streamline Ordnance materiel management. His staff worked to reduce the variety of small arms and artillery pieces to a few efficient models.

He also aimed to develop a cadre of highly trained Ordnance officers who could dedicate their inventive ingenuity to their profession. This effort created a tradition of technological innovation in the Ordnance Department and resulted in a generation of such “soldier-technologists” as Alfred Mordecai, George Bormford, Thomas J. Rodman, and John H. Hall. Indeed, assignment to the Ordnance branch was one of the most sought-after assignments for young officers graduating from West Point.

In 1832, Congress authorized the rank of Ordnance sergeant. This rank filled the Army’s need to have highly-trained and experienced Ordnance Soldiers at the increasing number of frontier posts and coastal defensive forts. To apply, a Soldier had to have at least 8 years of service, 4 of which had to be as a noncommissioned officer, and pass a series of examinations, including tests in mathematics and writing. The responsibilities of Ordnance sergeants included the maintenance of arms and ammunition at Army installations and the provision of those supplies to armies in the field. This rank continued until it was abolished in the Army Reorganization Act of 1920. Ten of the 15 Medal of Honor awardees in the history of the Ordnance Corps served as Ordnance sergeants during their enlistments.

Mexican War

The Mexican War of 1846 to 1848 provided the first
The Federal Armory at Springfield, Massachusetts, was established in 1795. Along with a second armory established at Harpers Ferry, Virginia (now West Virginia), in 1798, it served as a center of technological innovation in the young United States.

Real test of the Ordnance Department’s system of armories and arsenals. In 1841, there were 2 armories and 20 arsenals. These facilities met the needs of the Army for equipment and supplies to support the multiple campaigns of the Mexican War without difficulty. In view of this success, the system did not undergo any major reorganization following the war.

In addition to its support role in the war, the Ordnance Department established the Rocket and Howitzer Battery, the only unit in ordnance history raised specifically for combat duty. The battery’s 105 officers and enlisted men were the only ones with the experience to operate the new M1841 12-pound howitzer and the latest Hale war rocket; these weapons were still in the testing phase and had not been distributed to the Artillery branch for field use. The battery suffered 2 killed and 22 wounded during the war.

At the close of the Mexican War, the Ordnance Department numbered 1 colonel, 1 lieutenant colonel, 4 majors, 12 captains, 15 first lieutenants, and 10 second lieutenants, along with several hundred enlisted personnel and approximately 1,000 civilians at the armories and arsenals. In addition to its support role in the war, the Ordnance Department suffered 6 killed and 22 wounded during the war. The battery’s system of armories and arsenals.
A Federal cannon foundry was established at Watervliet Arsenal, New York, in 1887. This photo shows workers in 1895.

during such a sudden increase in size (approximately a tenfold increase). Regular Army troops were equipped with smokeless, bolt-action Krag-Jørgensen rifles, but most volunteer units had the single-shot, breech-loading, black powder M1873 Springfield. In a report following the war, the Chief of Ordnance, Brigadier General Daniel W. Flagler urged that funds be allocated to establish an adequate stock of war reserve munitions, but his recommendations went unheeded. As a consequence, the United States would have even greater challenges mobilizing for the far greater scale of World War I.

World War I

Even though World War I had been raging in Europe for nearly 3 years, the Ordnance Department had to play catchup when the United States entered the conflict in April 1917. With only 97 officers and 1,241 enlisted Soldiers, the department had a myriad of problems to overcome: no system below the Office of the Chief of Ordnance to coordinate with industry, no plan for mobilizing industry, an inadequate proving ground, no system of echeloned maintenance, a lack of sufficient schooling for enlisted Soldiers, and only 6 armories and manufacturing arsenals at Watervliet; Springfield and Watertown, Massachusetts; Picatinny, New Jersey; Frankford, Pennsylvania; and Rock Island, Illinois.

As the war progressed, the department overcame the lag, matured as an organization, and adapted to modern warfare. By the end of the war, the Ordnance Department numbered 5,954 officers and 62,047 enlisted Soldiers, with 22,700 of those officers and Soldiers serving in the American Expeditionary Forces in France. The Ordnance Department established 13 Ordnance districts across the country that had the authority to deal directly with industry and award contracts. By the end of the war, almost 8,000 plants were working on Ordnance contracts.

To offset industry’s reluctance to build new plants, the U.S. Government established a system of constructing the factories but contracting out their operation. By the war’s end, 326 Government facilities were operating under the auspices of contractors. This practice would be employed even more successfully during World War II. A new proving ground was established at Aberdeen, Maryland. Its construction began in November 1917, and by September 1918, 304 officers, 5,000 enlisted personnel, and 6,000 civilians were conducting tests on a wide range of munitions.

History of the Shell and Flame

The Shell and Flame (also known as the Flaming Bomb) had been used by European armies for several centuries before its adoption by the U.S. Army. In fact, it is still used by many countries in Western Europe, such as the Grenadier Guards in Britain. The insignia does not represent a bomb but rather an iron hand grenade with a powder charge and a fuse that had to be lit before throwing.

The Shell and Flame is considered the oldest branch insignia in the U.S. Army. The use of the Shell and Flame by the Ordnance branch dates back to 1832. It was also used by the Artillery branch until 1834, when the Artillery branch adopted the crossed cannons as its branch insignia.

The Shell and Flame continued to be used by a wide variety of Army organizations, not just the Ordnance branch, until 1851 when the new 1851 Uniform Regulations dictated that the Ordnance branch would be the sole users of the Shell and Flame. Despite its sole ownership by the Ordnance branch, multiple designs of the Shell and Flame existed. Different designs accompanied different uniforms. The 1851 Uniform Regulations granted enlisted personnel the opportunity to wear the Shell and Flame; previously, only officers wore the emblem. The dress uniform, the forage cap, the enlisted uniform, and many other uniforms had their unique designs. Most officer emblems were sewn onto their uniforms, while enlisted Soldiers had brass insignia affixed to theirs.

The multiplicity of designs continued through World War I. Indeed, with the deployment of the American Expeditionary Forces in France and the advent of collar disks with branch insignia, a dizzying array of designs existed. Even today, it is still not known how many different designs were produced. Designs in the United States had a tenure of approximately 10 years before a new insignia was designed for a particular uniform. In France, however, Soldiers employed a number of French manufacturers to make their uniform items.

In 1936, the Army Institute of Heraldry redesigned and standardized the design of the Shell and Flame. This stylized Shell and Flame remains the current version. Interestingly, all older versions were allowed to be grandfathered out of use. It is not uncommon to see photos of World War II Ordnance Soldiers still wearing the pre-1936 designs. There are portraits of officers wearing the pre-1936 design as late as 1962.

During World War I, the Ordnance Department fielded mobile Ordnance repair shops (like the 42d Infantry Division Mobile Ordnance Repair Shop shown here) and heavy artillery mobile Ordnance repair shops. These units moved with the division and provided a wide array of support to the line.
The Ordnance branch gained its third core competency, bomb disposal (renamed explosive ordnance disposal), which was added to its previous missions of ammunition handling and maintenance. The photo shows the new Bomb Disposal School at Aberdeen Proving Ground during World War II.

World War II
The Ordnance Department swelled exponentially in World War II and applied the lessons it had learned in World War I. The department was responsible for roughly half of all Army procurement during World War II, $34 billion dollars. President Franklin D. Roosevelt’s “Arsenal of Democracy” depended on the Ordnance Department to become a reality.

In January 1944, the Ordnance Department accounted for 7 manufacturing arsenals, 7 proving grounds, 45 depots, and 77 Government-owned, contractor-operated plants and works. Of the 77, all but one focused on ammunition and explosives. This exception was the Detroit Tank Arsenal in Michigan. It was built in 8 months while engineers simultaneously designed a new medium tank, the M3. By the end of the war, the Detroit Tank Arsenal had built over 22,000 tanks, roughly 25 percent of the country’s tank production during the war. The arsenal continued to operate as the Detroit Army Tank Plant until 2001.

The Ordnance Department’s strength during World War II increased from 334 to 24,000 officers, from 4,000 to 325,000 enlisted Soldiers, and from 27,088 to 262,000 civilians, all in an Army of approximately 8 million. Women Ordnance Workers (WOWs) accounted for approximately 85,000 of the civilian employees. Ordnance Soldiers and civilians worked across the globe, in places as diverse as Iceland, Iran, the Pacific Islands, Africa, Europe, and the Middle East. Aberdeen Proving Ground expanded exponentially and was the headquarters of The Ordnance School, the Ordnance Replacement Training Center, the new Bomb Disposal School, and the Ordnance Unit Training Center.

The Ordnance mission in the field operated on a scale never experienced previously by the Ordnance Department. The Ordnance branch gained its third core competency, bomb disposal (renamed explosive ordnance disposal [EOD] after World War II), which was added to its previous missions of ammunition handling and maintenance. By war’s end, the Army had more than 2,200 Ordnance units of approximately 40 types, ranging in size from squads to regiments.

The Ordnance Department applied the maintenance lessons it learned in World War I and devised a five-echelon maintenance system ranging from base shop maintenance to organizational maintenance, all in an effort to return materiel to operational status as near to the front line as possible. To complicate the maintenance mission, in 1942 responsibility for motor transportation was shifted from the Quartermaster branch to the Ordnance Department. The complexity of maintenance for such a wide variety of vehicles spawned several innovations that continue to the present, including a system of preventive maintenance and the publication of Army Motors (renamed PS magazine in 1951). Maintenance remained one of the largest challenges in World War II.

Korean War
During the Korean War of 1950 to 1953, the Ordnance Department reestablished many functions and methods deactivated after the end of World War II. The Ordnance Corps (renamed as such in 1950) re-established the schools previously located at Aberdeen Proving Ground to meet the increased demand to train officers and enlisted Soldiers. It reestablished its technical intelligence teams, which had collected German equipment for exploitation during World War II. In Korea, the Ordnance Corps exploited captured Russian and Chinese equipment. This captured World War II and Korean War materiel would serve as the foundation of artifacts displayed at the Ordnance Museum.

In Korea, the Ordnance Corps established a support infrastructure modeled on the one used in World War II, including echelonized maintenance operations, ammunition handling, and EOD operations. The Ordnance Corps improved this model through standardization to achieve tremendous success in reducing parts and processes, which had been one of the biggest challenges in World War II. Seven standardized engines and transmis-

With the experience it gained from the Punitive Expedition in Mexico in 1916, the Ordnance Department established an embryonic system of echeloned maintenance. For major repairs, it set up a system of ordnance repair base shops in France. For maintenance support to the field, the Ordnance Department fielded the mobile ordnance repair shops and heavy artillery mobile ordnance repair shops. These units moved with the division and provided a wide array of support to the line.

To train the new Ordnance Soldiers, the Ordnance Department established schools at a large number of locations, including universities, civilian factories, armories, arsenals, and field depots. Eventually, much of the training was consolidated at the Ordnance Training Camp at Camp Hancock, Georgia. By war’s end, more than 55,000 officers and Soldiers had been trained at one of these locations, including the 6 Ordnance schools in France.

Intervar Years
The story of the Ordnance Department between World War I and World War II is filled with both good news and bad news. Decreased budgets following World War I limited the amount of money it spent on research; maintaining war reserves was considered a higher priority. In spite of this, several legendary weapons were developed, including the M1 Garand rifle and the 105-millimeter howitzer. Tank development, however, lagged significantly.

The development of the Ordnance school system was a success story during the interwar years. Schooling for Ordnance officers and enlisted personnel was streamlined during this period and consolidated by 1940 at Aberdeen Proving Ground in The Ordnance School, a single location where all ordnance education would occur. This location would be center of the soul of the Ordnance branch for the next 68 years.
Reorganization and Vietnam

Following the massive reorganization of the Army in 1962 based on the Hoelscher Committee Report, the Ordnance Corps and the office of the Chief of Ordnance were disestablished. The Ordnance branch continued under the direction of the Army’s Deputy Chief of Staff for Logistics. The new Army Materiel Command assumed responsibility for many of the Ordnance Corps’ historical functions: research, development, procurement, production, storage, and technical intelligence. The Ordnance School was renamed the Ordnance Center and School and placed under the direction of the Continental Army Command. Combat development was delegated to a new Combat Development Command. Despite these changes, Ordnance officers and Soldiers continued their core missions of ammunition handling, maintenance, and EOD during the Vietnam War. Ordnance support fell under the control of the 1st Logistical Command, which divided Vietnam into four support commands. Ordnance units served vital roles under each of these support commands. New challenges, however, had to be confronted. Because of the counterinsurgency nature of the war, EOD units were spread thin; there was no “front line” as had existed in World War II or Korea. The 1-year rotational policy produced personnel shortages in some key fields. In the initial years of the war, spare parts were often in short supply and equipment availability rates were low. However, despite these challenges, operational readiness rates increased and by 1969 exceeded those of previous wars.

Post-Vietnam Developments

In 1985, the Ordnance Corps became the first of the Army’s support elements to reestablish itself under the branch regimental concept. The Chief of Ordnance regained responsibility for decisions concerning personnel, force structure, doctrine, and training. This change gave ordnance officers, Soldiers, and civilians the opportunity to identify with their historical predecessors in their mission of Ordnance support to the Army. In the past 22 years, Ordnance personnel have engaged in three sustained operations in the Middle East that tested their ability to adapt. In Operation Desert Storm in 1991, Ordnance personnel supported the largest armored assault in American history. Operation Enduring Freedom in Afghanistan, beginning in 2001, and Operations Iraqi Freedom and New Dawn, beginning in 2003 and ending in 2011, called on Ordnance officers and Soldiers to help overcome long-term insurgency campaigns. After nearly a century of operations at Aberdeen Proving Ground, the Chief of Ordnance and the Ordnance Corps moved to Fort Lee, Virginia, in 2008 as part of a 2005 Base Closure and Realignment Commission (BRAC) decision. The new campus at Fort Lee is dedicated to train approximately 70 percent of all Ordnance personnel. The remaining personnel are trained at one of six other locations across the United States.

Today, the Ordnance Corps consists of approximately 2,700 officers, 3,000 warrant officers, and 100,000 enlisted Soldiers serving on active duty or with the Army National Guard or Army Reserve. As the Ordnance Corps celebrates its bicentennial in 2012, its men and women continue the proud heritage of service to the Nation that Ordnance Soldiers have demonstrated since colonial times. The legacy of Samuel Sharpe and Decius Wadsworth continues into the 21st century.

Karl Rubis is the Ordnance Branch historian with the Army Ordnance Center and School at Fort Lee, Virginia. He holds a B.A. degree from Pepperdine University and an M.A. degree from the University of Kansas. He is a Ph.D. A.B.D. (all but dissertation) candidate at the University of Kansas.

The information in this article is compiled from “Serving the Line with Excellence” by Dr. Ken Stirling, lecture notes from the Ordnance Basic Officer Leader Course, and other sources located in the Ordnance historian’s office.
Logistics Movements in a Changing Afghan Environment

By Captain Owen A. Rose

During our deployment from May 2010 to May 2011, we completed more than 400 convoys that moved more than 10,000 pieces of equipment. These movements were primarily executed using military-escorted HNTs. This caused significant problems because the poor quality and unreliability of the trucks exposed our convoys to dangerous situations on the road. Some movements were accomplished using palletized load systems, but the trucks did not transport munitions, palletized sensitive cargo, and 20-foot containers.

Eight carrier companies operated under the host-nation contract. They had varying rates of reliability, and none was particularly distinguished in the quality of its operations. The carriers used many local drivers, who frequently switched between carrier companies and had no loyalty to any one carrier. The quality of the trucks supplied by the carriers under the host-nation contract was deplorable in every sense of the word. The age of the fleet and the general condition of the trucks resulted in frequent breakdowns during missions.

The rate of breakdowns became such a problem that the battalion established a joint quality assurance/quality control program for the trucks. This initially caused a mass outcry from the carriers because 80 percent of their trucks failed the checks performed according to the guidelines in the performance work statement. The missions that had to be canceled because of unsatisfactory vehicles resulted in a significant loss of revenue for the carriers.

In May 2010, a month into the program, marked improvements could be seen in the quality of the trucks sent by the carriers for missions. The program was not totally solved since trucks continued to break down. However, breakdowns occurred at a much lower rate than before. It was later learned that the program was implemented and generally for reasons that could not be pinpointed during the checks performed by the quality assurance/quality control team.

Most of the HNT drivers had no proof of qualification or licensure on the trucks they operated. To see teenagers operating these trucks was quite common and left one to question the authenticity of the drivers and their commitment to the contract. The performance work statement said that operators would be properly licensed for the vehicles they operated, but I never saw an Afghan driver’s license.

Driving the trucks through some areas was dangerous, and at times some drivers refused to travel certain routes. The fear of being identified as sympathetic to the United States and labeled as such by the Taliban, coupled with the bribes being paid to Afghan National Police and Afghan National Army officials at checkpoints, contributed greatly to the unwillingness of the drivers to travel along certain routes.

Fuel Supply Frustrates Carriers

Providing fuel for the trucks posed significant challenges. The lack of a defined standard for supporting HNTs across the Afghan combined joint area of operations caused some forward operating bases (FOBs) to refuse to give fuel to HNTs in convoys. The performance work statement dictated that trucks arrive at the point of mission origin with sufficient fuel to complete the assigned mission.

Ninety-eight percent of the time, HNTs showed up at the FOBs with barely enough fuel to make it through the entry control point. The drivers argued that they provided the drivers with money to purchase fuel and even fueled the trucks before they left the carrier holding yards, but this could not be verified. It was speculated that some drivers stole the fuel in the trucks and took it to the FOBs, knowing that the United States would provide them fuel before they started the mission.

If an HNT had passed all the necessary quality assurance checks and was selected for a mission but had no fuel, we supplied that truck with enough fuel to complete the assigned mission. The drivers were charged $15 per gallon for the fuel that we supplied to the HNTs, which was five times more than the price paid for fuel on the local market.

Was that a fair charge levied by the United States? That is open for debate, but what needs to be considered is that once a convoy was on the road, the convoy commander, because of the threat conditions, would not stop at local gas stations to allow the HNT drivers to refuel. During the course of the mission moving between FOBs, the drivers were then faced with a problem: either the local U.S. personnel would refuse to refuel them or, if they did get fuel, they were charged the $15 per gallon rate.

The price of fuel charged to the carriers needs to be revisited. The price has to be fair and equitable, taking into consideration that sometimes the HNT drivers do not have the option to refuel on the road. They therefore should not be penalized by having to pay the high rate to refuel with U.S. Government fuel.

Eagle Express Helps Convoy Management

The Eagle Express initiative was implemented in January 2011. Its intent was to alleviate the shortfall in transportation assets resulting from the loss of some standard assets. The biggest disadvantage of the Eagle Express was that it allowed customers to predict when each convoy would be at the respective FOBs. Before the Eagle Express, our convoy movements were driven by demand. The customer would submit its movement requests, and once a full load was reached, the convoy was planned. With the Eagle Express, the convoys were already planned and the customer could submit movement requests for those routes.

The biggest disadvantage of the Eagle Express was that some of its assets were often underused. Convoys often went out on certain routes with only one or two loads just to abide by the schedule. It was certainly not economical or safe for Soldiers to traverse the dangerous routes without having a reasonable amount of loads to escort.

Finding Time for Maintenance

The pace at which the 17th CSSB ran convoys allowed little, if any, time for performing proper maintenance on vehicles. Command maintenance is a term reserved for those units that have a strictly “on the FOB” mission. M-ATVs (MRAP [mine-resistant ambush-protected] all-terrain vehicles), MaxxPro, palletized load systems, wreckers, and other equipment that go out on convoys were subjected to 48-hour and 24-hour unit quality assurance/quality control checks, as well as a 4-hour battalion-level quality assurance/quality control check before they left on missions. This did not take the place of a command maintenance program, as was itemized in the directive requiring all convoy commodity managers to in a signed copy of the load logs, signifying that the customers had physically signed for their equipment. In the convoy staging yard, operations were also modified to ensure that all HNTs were correctly assigned, and the equipment’s destination, heights of loads were verified for the specific route to be followed, and the customers had removed all sensitive items.

The 17th CSSB improved the way logistics movements were executed across Regional Commands East, North, and South. Over the year of our deployment, we adopted new policies and procedures and shaped others to better reflect the changes we faced in threats, demands, and capabilities. Our customers continued to have diverse and challenging requirements, but we were able to meet and surpass them all. Our replacements assumed an operation that had been refined and tested, and they will only continue to make it better as they respond to the demands of their customers.

Captain Owen A. Rose is completing the Engineer Captains Career Course. His next assignment will be at Headquarters, Eighth U.S. Army in Korea. He was the transportation officer of the 17th Combat Support Battalion during its deployment to Afghanistan. He has an associate’s degree in biomedical engineering and a bachelor’s degree in construction management and is pursuing a master’s degree in project management from the University of Alaska at Anchorage and in geological engineering from the Missouri University of Science and Technology.
The CSSB Challenge: Doing More With Less

The modularity of a combat sustainment support battalion limits its ability to follow the Army Force Generation cycle, and the demands on the battalion are greater than the capabilities it is authorized through its modified table of organization and equipment.

Many demands are placed on a combat sustainment support battalion (CSSB) headquarters in today’s Army. As a modular battalion, the CSSB is not habitually under a brigade and has no organic subordinate units. The CSSB is capable of deploying independently and providing mission command for assigned and attached subordinate units in order to provide full-spectrum sustainment support as required. The 17th CSSB, stationed at Joint Base Elmendorf-Richardson, Alaska, provides mission command for 12 individual companies and detachments spread over 360 miles: six on headquarters, six on Elmendorf-Richardson and Fort Wainwright, Alaska, with a total of more than 1,300 Soldiers authorized. In the last 5 years, the battalion deployed twice: once in support of Operation Iraqi Freedom (OIF) and later to train for its wartime mission and to establish staff processes and manage a battalion that had combined action training responsibilities with its Afghan military partners.

In the 17th CSSB’s case, the customers in garrison are the battalion’s subordinate units, the size and scope of the battalion’s command supply discipline program is immense. The S-6 section is responsible for all of the battalion’s network users, automation equipment, and network trouble tickets. The FY 2011 authorizations for the 17th CSSB S-4 and S-6 sections were seven Soldiers each. For FY 2012, the S-4 authorization decreased to five and the S-6 decreased to six, yet the workload remained the same.

The MTOE changes to the support operations (SPO) and S-3 sections offset each other since the only change was to move the plans section from under the SPO to the S-3. In the SPO section, the biggest workload increase was not necessarily because of size or modularity but because of the addition of a new responsibility: contract oversight. During the OEF deployment, the SPO section provided contracting officers’ representatives with the capability to evaluate 12 contracts and the performance of over 500 contractors.

In the past 5 years, the 17th CSSB has been the size of a brigade minus, whether forward deployed or in garrison. Yet some key staff sections have remained the same size as those of a much smaller battalion. In garrison during the summer of 2009, the 17th CSSB was manned at 80 percent—despite the fact that the battalion had 12 units and 1,323 Soldiers—since it was not on the patch chart to deploy. It was a significant challenge to execute the battalion’s own unique training requirements, the CSSB faced a significant challenge to develop and execute a meaningful battalion-level training exercise.

Professional Development and Training

A large modular battalion encounters several professional development challenges. Developing leaders is more difficult because the whole battalion is not on the same Army Force Generation (ARFORGEN) cycle. Invariably, dwell-time issues occur when moving officers and NCOs between companies and headquarters, which must be done to ensure the professional growth and development of those personnel. Another problem is the fact that many junior leaders will serve under three to five different battalion commanders during a 3-year tour. This makes mentorship from the battalion command team inconsistent and, in some cases, very minimal because of the short amount of time those junior leaders serve with a particular battalion headquarters.

Training a CSSB in garrison is very challenging when the battalion’s subordinate units are on different ARFORGEN cycles. In order for a sustainment battalion headquarters to perform its wartime mission, there must be a sustainment mission to perform and sustainment units on hand to execute it. This training can be accomplished through theater exercises (TFXs) built to rehearse all the capabilities of the battalion or through daily garrison support requirements.

In the 17th CSSB’s case, the customers in garrison are the battalion’s higher headquarters, the 3d Maneuver Enhancement Brigade (MEB), which lacks an organic brigade support battalion (BSB), and U.S. Army Alaska (USARAK). As the only EAB sustainment battalion in USARAK, the 17th CSSB supported the 3d MEB in a direct support role and USARAK in a general support role. However, because of the ARFORGEN cycles of subordinate units, the support requirement never matched the 17th CSSB’s IOF and OIF deployments.

The MTOE of the 17th CSSB did not support those in garrison, yet the battalion still had to support it. This forced the battalion to find ways to support those units, either by providing grants or transfers from the battalion’s IOF and OIF deployments. For example, the 3d MEB needed sustainment-level maintenance support, but the 98th Maintenance Company was deployed. USARAK needed transportation support between Fort Wainwright and Joint Base Elmendorf-Richardson, but both of the transportation companies were deployed. Contractors were brought on board and transportation companies returned, the headquarters was deploying again. Even though the support requirements were there, the 17th CSSB missed out on garrison training opportunities because of modularity.

National Training Center Rotation

Before deploying to OEF, the battalion conducted three staff exercises and a National Training Center (NTC) rotation at Fort Irwin, California. With 12 units spread across 360 miles to command and each with its own unique training requirements, the CSSB faced a significant challenge to develop and execute a meaningful battalion-level training exercise.

Before the OEF deployment, the 17th CSSB did not conduct any battalion collective training exercises. One staff exercise was conducted in December 2009, and 2 of 12 companies participated. The staff was distracted by the other 10 units throughout the FY 2010, not until after a provisional staff stood up in January 2010 cycle and the transfer of all subordinate units was complete that the 17th CSSB headquarters completed the bulk of its predPLOYMENT training.

The constant deployment, redeployment, activation, and inactivation of units—caused by the battalion’s units being on different ARFORGEN timelines and having individual and unique training requirements—hindered the CSSB’s ability to have a meaningful battalion-level training exercise. The 17th CSSB’s two staff exercises
The 17th CSSB was fortunate to be able to stay in the rotational unit bivouac area, and it benefited from the battalion tactical operations center’s claimshell tent being wired for network connectivity. If the headquarters had been pushed forward into the training area, it would have inevitably pulled from the SBCT’s limited signal company capability, potentially hindering other units’ ability to train. Being a battalion headquarters not habitually under a brigade requires a CSSB to be as independent as possible and ready to deploy as an expedient force to an immature theater with no theater-provided equipment or as a follow-on force in a well-established theater. The addition of the Command Post Node will require a military occupational specialty 25N (nodal network systems operators/maintainer) Soldier to be added to the MTOE.

In the past 5 years, the 17th CSSB has been the size of a brigade minus, whether forward deployed or in garrison, yet the staff has remained roughly the same size as its smaller support battalion counterparts. In October 2011, some key staff sections actually became smaller than comparable non-CSSB support battalions. The size of the battalion and the diversity of the subordinate units, together with MTOE equipment constraints, make it impossible to conduct a simple FTX without relying completely on outside organizations to assist. It is unrealistic to continue to build the MTOE of a CSSB to fight an insurgency in a mature theater with plenty of theater-provided equipment on hand. If the trend is not reversed, critical skills will continue to be lost and CSSBs will become incapable of expeditionary operations. CSSB MTOEs should be changed in six ways.

First, modularity and size should be considered. In order to maintain the pace at which CSSBs operate, whether forward deployed or in garrison, MTOE manning should not be reduced in the aggregate. Second, E–7 and above positions should be manned at no less than 90 percent, regardless of where the CSSB is in the ARFORGEN cycle, to account for the increased workload.

Third, a contracting NCO should be added to the MTOE under the SPO section to act as the subject-matter expert and handle all contract administration requirements.

Fourth, the CSSB MTOE should be equipped for the worst-case scenario, which is an expeditionary capability designed to hold up in a force-on-force, high-intensity conflict.

Fifth, the number of OCs on the Gold Miner team should be increased, and mission command, mentorship, and training of the rotating CSSBs should become a primary focus of the 916th Support Brigade.

Sixth, a war trace alignment of National Guard and Army Reserve units with active CSSBs should be developed so that the units have some level of familiarity before deployment. This would allow multiproduct CSSBs to conduct training events, including FTXs and combat training center rotations, during Army National Guard and Army Reserve annual training.

MAJOR THOMAS W. HAAS is currently attending the Army Command and General Staff College. He has bachelor’s degrees from the University of Wisconsin and is a graduate of the ORGANIZATION BASIC OFFICER LEADER COURSE, the AIRBORNE SCHOOL, and the COMBINED LOGISTICS CAPTAINS CAREER COURSE.
Fuel delivery operations in Afghanistan are complicated by host-nation trucking system challenges, including pilferage, maintenance problems, and life support issues.

**Fuel Operations in Regional Command East**

How coalition forces deliver, consume, and distribute class III (petroleum, oils, and lubricants) in Afghanistan has been the subject of many contract negotiations, and the process seems to be improving. As the sole contractor to support battalion (CSSB) in Regional Command East, the 17th CSSB, also called Task Force 17, based out of Joint Base Elmendorf-Richardson, Alaska, was challenged in June 2010 to continue to improve the class III (bulk) distribution system put in place by the 524th CSSB, based out of Hawaii. What was discovered through extensive research and painful “trial and error” attempts was that there were entirely too many different ideas on how to improve the bulk fuel management system.

One idea was that a stationary pipeline was put in place. This has finally been accomplished. TS-1 (an aviation fuel for fixed- and rotary-wing aircraft), which had been delivered by rail from Turkmenistan, Uzbekistan, and Kazakhstan, is now delivered by pipeline. The use of this type of fuel deliveries by vehicle to various Defense Logistics Agency sites in Kandahar, Kabul, and Bagram, Afghanistan. The number of fuel delivery trucks on Bagram Airfield was also reduced because of direct delivery to some forward operating bases, namely Camp Phoenix in Regional Command Central and Forward Operating Base Ghazni.

**Host-Nation Trucking Challenges**

The stationary pipeline is a much more streamlined, efficient way of delivering fuel than the host-nation trucking (HNT) system. The deliveries made by HNT contractors often are short on fuel amounts because of the shabby construction of some trucks, tank leaks, trash found in the fuel tanks, and lags in download time.

Contractually, fuel trucks are given 7 days to arrive at destinations that normally take several hours to reach. Because of this, many military units program fuel trucks into their logistics convoys to increase reliability and guarantee that trucks will arrive at the final destination with their full loads.

**Pilferage is the leading cause of failed delivery missions.**

Even when a fuel truck is escorted by military convoys, a driver occasionally will leave a convoy and not return. It is suspected that some drivers leave convoys because they do not want to be targeted along with the rest of a convoy by the military. Sometimes they will return with less fuel cargo than they originally were carrying, leading coalition personnel to conclude that they sold some of the fuel to make extra money. Usually when the fuel truck drivers return, the fuel’s quality is degraded because the missing fuel has been replaced with some other liquid.

Pilferage is the leading cause of failed delivery missions. The trucks have distinct identification numbers and seals on their fuel tank valves. If, during a convoy or delivery mission, these seals are tampered with, replaced, or damaged before reaching the destination, the truck driver is not paid for the mission and his employer’s profit margin is reduced by $15 per gallon for the missing fuel.

When a driver is apprehended for stealing, he is banned from conducting fuel delivery at Bagram Airfield. Banned drivers are allowed to return to base to attempt to lower their punishment from disqualification because of the ability of the drivers to acquire local fuel. Disqualified fuel truck drivers are disqualified from future fuel delivery missions. Fuel delivery missions are invalid if there is a lack of fuel or a lack of roadworthiness cost the unit more than $600,000 a month.

Although it was effective, the quality assurance/quality control program could not continue because of an increased need for fuel in the theater. Fuel delivery missions are not valid under this program and are not counted under this program.

Life support problems were as consistent as the loss of fuel resources and theft. Some fuel truck drivers were unhappy with the quality of the meals provided to them by the military. Task Force 17 and the 101st Sustainment Brigade coordinated to have an Afghan food vendor at one of the entry control points to meet increased driver food requirements.

It may be surprising that these various challenges could have such an impact on the fuel distribution industry in Afghanistan. Like many other cultural, industrial, and corporate practices that have come to be recognized as “how it is done here,” Task Force 17, as a fighting force, had to learn to embrace unique cultural differences to foster a progress that would remain long after its operations were complete. Considering that Bagram Airfield’s average weekly fuel consumption rate was nearly 1.5 million gallons of JP8, more than 25,000 gallons of DF2 (diesel fuel), and 125,000 gallons of gasoline, it is safe to say that any fuel truck that was disabled, delayed, destroyed, detoured, or mechanically unsafe caught the attention of leaders at all levels.

Task Force 17’s progress toward stable fuel distribution operations inspires hope for the future. The task force endeavored to foster a working relationship that was conducive to moving toward a unique system of coalition forces and local nationals sharing the responsibility of securing a prosperous future for Afghanistan.

**Pilferage: The Leading Cause of Failed Delivery Missions**

BY MAJOR JONATHAN MCDougAL

Fuel delivery operations in Afghanistan are complicated by host-nation trucking system challenges, including pilferage, maintenance problems, and life support issues.

Even when a fuel truck is escorted by military convoys, a driver occasionally will leave a convoy and not return. It is suspected that some drivers leave convoys because they do not want to be targeted along with the rest of a convoy by the military. Sometimes they will return with less fuel cargo than they originally were carrying, leading coalition personnel to conclude that they sold some of the fuel to make extra money. Usually when the fuel truck drivers return, the fuel’s quality is degraded because the missing fuel has been replaced with some other liquid.

Pilferage is the leading cause of failed delivery missions. The trucks have distinct identification numbers and seals on their fuel tank valves. If, during a convoy or delivery mission, these seals are tampered with, replaced, or damaged before reaching the destination, the truck driver is not paid for the mission and his employer’s profit margin is reduced by $15 per gallon for the missing fuel.

When a driver is apprehended for stealing, he is banned from conducting fuel delivery at Bagram Airfield. Banned drivers are allowed to return to base to attempt to lower their punishment from disqualification because of the ability of the drivers to acquire local fuel. Disqualified fuel truck drivers are disqualified from future fuel delivery missions. Fuel delivery missions are invalid if there is a lack of fuel or a lack of roadworthiness cost the unit more than $600,000 a month.

Although it was effective, the quality assurance/quality control program could not continue because of an increased need for fuel in the theater. Fuel delivery missions are not valid under this program and are not counted under this program.

Life support problems were as consistent as the loss of fuel resources and theft. Some fuel truck drivers were unhappy with the quality of the meals provided to them by the military. Task Force 17 and the 101st Sustainment Brigade coordinated to have an Afghan food vendor at one of the entry control points to meet increased driver food requirements.

It may be surprising that these various challenges could have such an impact on the fuel distribution industry in Afghanistan. Like many other cultural, industrial, and corporate practices that have come to be recognized as “how it is done here,” Task Force 17, as a fighting force, had to learn to embrace unique cultural differences to foster a progress that would remain long after its operations were complete. Considering that Bagram Airfield’s average weekly fuel consumption rate was nearly 1.5 million gallons of JP8, more than 25,000 gallons of DF2 (diesel fuel), and 125,000 gallons of gasoline, it is safe to say that any fuel truck that was disabled, delayed, destroyed, detoured, or mechanically unsafe caught the attention of leaders at all levels.

Task Force 17’s progress toward stable fuel distribution operations inspires hope for the future. The task force endeavored to foster a working relationship that was conducive to moving toward a unique system of coalition forces and local nationals sharing the responsibility of securing a prosperous future for Afghanistan.
Boat to Plane to Foxhole: Seven Key Steps to Intermodal Operations

Transferring cargo from sea to air transportation can be a very challenging part of an overseas deployment. But units can ease the difficulty by concentrating on seven critical areas.

When the 1st Air Cavalry Brigade at Fort Hood, Texas, received orders to deploy to Operation Enduring Freedom 11–12, it first had to plan how to get there. Afghanistan presents a transportation nightmare because it is a land-locked nation and it is surrounded by nations with less-than-secure lines of communication, to put it lightly. Since Afghanistan has no seaport of debarkation and very limited and unsecure overland transportation, most supplies, troops, and equipment come into the country by strategic airlift.

Planning to deploy any brigade into combat presents many logistics challenges, but deploying a maintenance-heavy aviation brigade into three different airfields, with further support to be provided to at least six forward bases, presents a near impossibility. After many planning sessions, the brigade’s leaders determined that the biggest point of friction in deploying to Afghanistan would be the intermodal port.

The intermodal port is the point where cargo changes modes of transportation. For the 1st Air Cavalry Brigade, our cargo changed from the sea leg to the air leg at Naval Station Rota, Spain. With help from the Navy, Air Force, and civilian support personnel, the brigade supervised and facilitated the offloading of 64 helicopters and over 400 pieces of equipment. This equipment included rolling stock, canted equipment, and containers. Once offloaded from the boat, all equipment was moved to the airfield to prepare it for shipment by Air Force strategic airlift assets.

While preparing cargo to be shipped into Afghanistan, we learned seven key steps to successfully and safely deploying our cargo by air. In less than 30 days, the 1st Air Cavalry Brigade team at Rota was able to push 27 “chucks” of cargo using Air Force C-5 Galaxy transports. A chuck is the personnel, equipment, and supplies that make up the load of an aircraft. It refers to a chuck number that is assigned to an aircraft and the corresponding chalk number given to personnel, equipment, and supplies that will be loaded on that aircraft for transport. Although most units can adapt on the fly to succeed, these seven lessons learned will better prepare your unit to conduct intermodal operations.

The Right Supplies

As with any unit movement operation, having the right supplies on hand can make the difference between success and failure. The most common items we needed were ones that every good unit movement officer (UMO) has on hand at home station. Unfortunately, we were not at home station. We found ourselves short on zip ties, boltcutters, one-time locks, document protectors, and duct tape. Although mundane, all of these items were crucial to preparing cargo for air load.

The zip ties were used to affix paperwork and radio frequency identification (RFID) tags. The boltcutters became important because we had to open all of our containers so that the Air Force joint inspection (JI) team could certify our loads. The extra one-time locks were then used to resell all containers.

If your unit is involved in intermodal operations, after completing load certification you will be required to affix pallet identifier forms (Air Force Form 2279) to all equipment. To ensure that this paperwork stays intact, you should use document protectors and duct tape. You also should use duct tape when you mark your equipment’s center of balance and identify its gross weight during the JI process.

Recon the Port in Advance

To ensure the success of any port support activity, you need to reconnoiter the port in advance. This is even more important when you are dealing with a combined seaport and airport. Conducting a reconnaissance of your port ahead of time will provide you with important contact information for support and a conceptual picture of the operation and will also allow you to identify requirements for life support (such as billeting, food, and transportation) your unit will need while at the port.

To gain an even better conceptual understanding of the requirements to be successful, conduct your reconnaissance while a unit similar to yours is moving through the port. For instance, our unit sent our support operations officer to Naval Station Rota while the 159th Combat Aviation Brigade was deploying through there. The lessons learned and physically seeing another aviation brigade deploy provided us with invaluable information.

To fully reap the benefits of your reconnaissance, ensure that it is conducted well in advance of your movement timeline. Conducting it 180 days out is optimal, but 120 days out will suffice.

Preparing Your Sensitive Items

When preparing sensitive items (SI) containers, some of the most important things to remember are also the most obvious. Ensuring that your DD [Department of Defense] Form 1750s (packing lists) are extremely detailed and accurate is the most important thing to remember. Remember that all SI packing lists are secured to the inside of the container, and only “dummy” packing lists are affixed to the outside (to maintain operational security). Make sure that your UMO at the intermodal port has copies of all 1750s for your SI containers and hazardous materials (HAZMAT).

The more accurate the SI packing lists are, the easier your JI will be. You should expect that the JI team will inspect every piece of cargo down to the smallest detail. If they report items that do not reflect the additional cargo in a container, specifically SI, the JI team can require you to empty all of your containers and repack them while they supervise the work.

If you decide to use standard locks on your SI containers, ensure that the UMO has the keys on hand; otherwise, all locks will be cut for the JI. The best tactic to forego any lock issues is to use one-time locks that have serial numbers. This provides security, a tracking number, and the ability to remove a lock with a pair of boltcutters (commonly called “the master key”). In addition to using serial-numbered one-time locks, it is a good idea to duct tape each lock to the outside of a container’s doors. This will allow the container to be resecured with serial-numbered locks after the originals are cut by the JI team. These new serial numbers can then be annotated on the container’s packing list and initialed by the UMO to denote a change.

One last major issue affecting SI containers during intermodal operations is physical security. Your container may be stored on a very secure airfield or in a port container yard lacking proper security measures. But no matter where your containers are stored, it is imperative that you check with the local provost marshal or law enforcement agency. They will be able to inform you of all available security measures, such as police patrols or cameras. The local law enforcement officials will also tell you about possible unit or external requirements for storing your SI containers. Some seaports and airports will provide an armed guard, but other ports may require the unit to provide guards (with weapons).

Ensure that you clearly identify security requirements well in advance so you can arrange for ammunition, weapons, or contracted security. No matter what security measures are taken, it is always a good practice for UMOs to check all SI containers twice a day to ensure that no tampering or theft has taken place.

UMOs, HAZMAT Certifiers, and Load Planners

Each unit needs to have three people who are certified, experienced, and able to operate with minimal guidance from higher levels. These people are your battalion UMO, HAZMAT certifier, and air load planner. The best pract-
The Army Sustainment and physically chain them onto an Air Force aircraft. All will then take these pallets, as well as military vehicles, practice loading actual 463L pallets with cargo. The students planner through critical cargo preparation. Skills taught at the Air Load Planner Course (ALPC), which is more to produce an automated load plan for cargo to travel on is the Automated Air Load Planning System (AALPS) hashes on each side when printed.

You should ensure that a color printer is available at home station for each piece of equipment containing HAZMAT being shipped. Every chalk pushed by airlift specified by your ITO or through a troop school (usually an unit movement operations and the use of the Transporta-

You should then have all dunnage and shoring successful pallet build. Using this technique will ensure that your pallets are not kicked back for rebuild by either the JI team or the loadmaster. The last and most important preparation for a pallet-building operation is having precise dunnage and shoring ready. Since you can have no metal-on-metal contact when shipping strategic air, you have to buffer all palletized metal containers with plywood on the pallet. Using your unit’s unit deployment list will give you a sol-

The biggest factors in any movement operation remain the same: using trained and qualified people, planning the operation well in advance, and allowing for flexibility throughout the movement. Often, having the right people and right equipment in the right place can mean the differ-

The teams should standardize their chaining and tiedown methods and their safety techniques, such as hand-and- arm signals and forklift procedures. When you arrive at your interimodal port, ensure that both your assigned JI team and the senior loadmaster on site are present as you build the first chalk of pallets. This will ensure that your pallet teams, the JI team, and the loadmasters all follow the same standards for achieving a successful pallet build. Using this technique will ensure that your pallets are not kicked back for rebuild by either the JI team or the loadmaster.

Conducting an intermodal operation—moving from the sea to the air leg—an enormous undertaking from the platoon UMO all the way to the brigade mobility officer. Although not all-inclusive, these seven key steps can help set your movement plan in the right direction.

The biggest factors in any movement operation remain the same: using trained and qualified people, planning the operation well in advance, and allowing for flexibility throughout the movement. Often, having the right people and right equipment in the right place can mean the difference between success and failure. And remember: Nothing happens until something moves!

## National Stock Numbers of Pallet Equipment

<table>
<thead>
<tr>
<th>Item Description</th>
<th>National Stock Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratchet Strap (white)</td>
<td>1670-00-725-1437</td>
</tr>
<tr>
<td>Top Net</td>
<td>1670-00-969-4103</td>
</tr>
<tr>
<td>Side Net</td>
<td>1670-00-996-2780</td>
</tr>
<tr>
<td>Adjuster Assembly (binder)</td>
<td>1670-00-212-1149</td>
</tr>
<tr>
<td>Chain</td>
<td>1670-00-516-8405</td>
</tr>
</tbody>
</table>

Your unit should use the unit deployment list from your TC–AIMS II movement plan to identify how many pallets you will need for your movement. You also will be able to determine how many chains, binders, white cargo straps, and cargo nets are needed. Whether you use chains or straps depends on the cargo’s dimensions. Your local A/DACG, load planner, and brigade mobility warrant officer will be able to determine which cargo requires which types of tiedowns. When in doubt, always refer to your local A/DACG for guidance. Chains, bindings, white cargo straps, and cargo nets can all be ordered through your division’s local National Stock Numbers (NSNs) in the chart at left. Pallets will have to be ordered through your brigade S-4 from the division transportation office in your division G-4. From there, your G-4 will redetermine the requirement for pallet assets to the next level of command and ensure an allocation can be made.

Pallets are a commonly used and rotated asset in air movement operations. To ensure that they are being properly used and secured, most A/DACGs will track them and ensure that they stay at the airfield and are used strictly for air movement operations. Since pallets are so closely controlled, ensure that your brigade mobility officer or S-4 forwards your pallet request well in advance (at least 90 days).

Ensure when ordering your equipment that you use the right NSNs. A common mistake is to use yellow cargo straps (often used for vehicle recovery). Yellow cargo straps cannot be used for air movement since their maximum gross weight is not clearly printed on the strap itself. A white cargo strap (see its NSN in the chart) has the markings printed in intervals on it stating “5000 LB CAP.”

## References

*Captain Christopher Sheehan is the commander of a forward support company in the 1st Air Cavalry Brigade at Fort Hood, Texas. He served as the brigade support operations transportation officer overseeing the brigade’s deployment through the intermodal port of Rota, Spain. He has a B.A. degree in business administration from the University of North Carolina at Chapel Hill and is a graduate of the Transportation Officer Basic Course.*
The Army Command and General Staff College (CGSC) Warrior Logistics Scholars Seminar is a graduate-level program designed to expose select field-grade officers to the best practices in military and corporate supply chain management to the logistics. The 10-month program combines the Fort Leavenworth, Kansas-based Intermediate Level Education (ILE) common core and sustainment-focused electives period with the full Graduate Curriculum (NLE) endorsed University of Kansas (KU) master of science in business.

The KU master’s program features a concentration in supply chain management and logistics, while the ILE electives period provides opportunities for education with industry (EWI) and sustainment field studies at strategic-level (SLE) organizations. I was honored to be among the 16 officers to participate in the inaugural Warrior Logistics Scholars Seminar. The exposure I gained from participating in this intellectually demanding program had a positive effect on my professional development, increasing my analytical skills and my supply chain management and logistics knowledge. This article serves as my after-action review of the program and recommends changes for the way ahead.

Selection Process
To be considered for 1 of the 16 seminar seats in the 2010–2011 ILE year, each applicant was required to submit a written essay, a memorandum requesting participation, his last 3 officer evaluation reports, and his officer records brief. Incoming ILE students applied for the program while in-processing at CGSC and were notified of their selection a few days before the official start of the course. This selection process yielded a very diverse group, including 11 Army Logistics Corps officers, 1 Armor officer, 1 Chemical officer, 1 Aviation officer, 1 Navy engineer, 5 Army and 4 Air Force C–5 Galaxy pilot.

The CGSC core curriculum consisted of instruction in leadership, military history, force management, and joint, interagency, and multinational operations. The various departments within CGSC emphasized staff functions at the operational level in environments across the full spectrum of conflict. In addition to this instruction were numerous graded assessments of the writing and critical thinking skills of each warrior logistics scholar. Seminar students participated in the same common core curriculum as other students in ILE Class 11–01, including guest speaker engagements, strategic communication requirements, and additional duties.

KU Course of Study
The Warrior Logistics Scholars Seminar students also attended class 2 to 3 nights a week as they worked toward completing the KU master of science in business in supply chain management degree program. Although all of the KU courses were presented at Fort Leavenworth, they were taught by KU professors.

The first phase of the KU program was focused on core business functions with courses in accounting, economics, statistics, finance, project management, and an introduction to supply chain management. Each course held four hours of lecture that met in the evenings for approximately 3/4 hours. Requirements for each subject consisted of homework assignments that averaged 3 hours of study per week, in-class exams, Blackboard discussions, and mid-term and final exams.

Education With Industry
Once the seminar students completed the CGSC core common blocks of instruction, their schedules were altered from that of a traditional ILE student to support the EWI phase and CGSC course L200, Leadership, and H200, Military Innovation in the Intervar Period. On Mondays and Fridays, scholars participated in the leadership and history courses; the remaining 3 days were dedicated to EWI.

The overall objectives of this portion of the program were to provide exposure to the corporate environment, witness best industry practices, and apply lessons learned from the KU coursework to assigned corporate projects. Based on individual interests, experience, and previous education, officers were paired with participating firms in the areas of supply chain management or logistics-related projects. Firms such as Hallmark, Harley-Davidson, and Frito-Lay were provided with two to three officers who worked from 0900 to 1500 on each Tuesday, Wednesday, and Thursday.

In my corporate assignment, I worked on a reverse logistics project at the Hallmark corporate headquarters in Kansas City, Missouri. My specific project-related tasks at Hallmark were to:

- Research industry best practices in reverse logistics using external sources.
- Document and validate current Hallmark reverse logistics procedures and workflows (physical and information) and quantify current costs and resource requirements.
- Identify improvement opportunities in Hallmark’s current reverse logistics/returns process based on findings from best-practice research and develop recommendations to enable supply chain and business staffs to improve the firm’s current reverse logistics operations.

From January through May, EWI continued with required KU coursework, sustainment field studies, and CGSC electives. The KU courses were focused on core supply chain management issues, including manage change management, transportation and logistics systems, information systems, procurer and supplier management, and a final capstone project. The students were challenged to solve a real-world supply chain management issue for a major distribution firm under the guidance of the company’s president.

CGSC Spring Electives
The second phase of the KU courses continued on Friday evenings and on Saturdays from 0830 to 1600 in support of the CGSC Spring Electives Term I travel requirements.

In the sustainment field studies period, which was substituted for the spring electives, we visited the TACOM Life Cycle Management Command headquarters, Navy Supply Command headquarters, and Defense Logistics Agency New Cumberland, Pennsylvania. We received overview briefs, tours, and demonstrations of each organization’s current operations, supply chain issues, and future role in the military’s strategic supply chain.

Following each visit, an officer provided the visit organization with a study on the issues presented and recommended solutions.

After completing the travel period, CGSC Spring Electives Term II electives became the main effort of the program. The electives were sustainment-focused to further broaden each officer’s knowledge and provide preparation for post-ILE assignments. For example, I elected to take the Sustainment Brigade Operations Course, Support Operations Course, and Battle Command Sustainment Support System Course.

In the closing weeks of the program, we participated in a local Council of Supply Chain Management roundtable, a KU graduation social, a KU hooding ceremony, and finally the KU graduation ceremony in Lawrence, Kansas.

Recommended Program Improvements
The leaders within CGSC’s Department of Logistics and Resource Operations (DLRO) have developed a curriculum for the Warrior Logistics Scholars Seminar. It is one of the few, if not the only, programs that specifically target the professional development of field-grade Logistics Corps officers. However, a few adjustments can be made to improve the program.

As the program gains popularity, the demand to participate will greatly exceed available seats for the seminar. To ensure that the selection process yields the best qualified officers to participate in the program, I recommend that CGSC add the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) to the application process. With this additional requirement, the application process deadline should be at least 30 days before the ILE start date in order to provide administrators with adequate time to select the best qualified officers for the program.

To ensure that officers are correctly assigned after completing the Warrior Logistics Scholars Seminar, a special skill identifier should be identified to ensure that qualified officers and resource available to graduates of the Theater Logistics Planners (TLOG) program should be awarded to the officers who complete the seminar. My recommendation is that graduates of the program receive following assignments within the sustainment community: headquarters, corps- and division-level G–4 staffs, the Defense Logistics Agency, the Army Materiel Command, the Military Surface Deployment and Distribution Command, the Army Logistics University, and the Army and Air Force Exchange Service. This will ensure that the Army can take full advantage of the skills gained by graduates of the seminar.

The Warrior Logistics Scholars Seminar demonstrates CGSC’s tremendous flexibility and creativity. DLRO’s development of this specialized program enhances the military’s ability to meet the current needs of the changing sustainment environment. As factors such as globalization, technological advances, joint and interagency Government interoperability, and dependence on the military industrial complex continue to affect Army sustainment operations, officers with the diverse skill set acquired in the Warrior Logistics Scholars Seminar will greatly benefit the Army.

By making minor adjustments to the application process and tracking the officers who complete the program, the sustainment community will produce a stellar program that develops field-grade officers with the knowledge needed to combine the best practices of civilian supply chain management with current military sustainment operations at the strategic, operational, and tactical levels.

Major Travis J. James is an instructor for Phase II of the Support Operations Course at the Army Logistics University. He holds a bachelor’s degree in resource management from Troy University, a master’s of business administration degree from Mississippi State University, and a master’s degree in supply chain management and logistics from the University of Kansas.
What “Shona ba Shona” Means to Army Logisticians

By CAPTAIN MICHAEL D. ANDERSEN

By helping to train Afghan logisticians, an Ordnance Soldier fulfills his desire to have a direct and positive impact on Afghan National Army operations.

Long after the withdrawal of combat forces from Afghanistan ends, the effect the United States has had on the country will still be significant. The world will measure the United States and its Army by the legacy left behind, good or bad. Afghanistan presents a world of opportunity for Army logistics. This includes the opportunity not only to train and assist in building the Afghanistan National Army (ANA) to take over but also to teach and mentor the Afghans in basic logistics principles and discipline.

First Deployment
I first deployed in support of Operation Enduring Freedom VI as a wheeled vehicle mechanic. Although I was happy in my work, I felt that I was not having the direct impact that I had imagined during predeployment training. Then Sergeant First Class Louis Steinke, my platoon sergeant, became the local representative for Operation Crayon. Through this program, I was able to travel to various places around northern Afghanistan and deliver large amounts of supplies and equipment to Afghan people. However, despite delivering thousands of pounds of supplies, I felt as though I was missing something important.

On 4 July 2010, General David Petraeus said, “To our Afghan partners: We will do all that we can to help you build a country free of the fear of the Taliban and Al Qaeda, a country in which all citizens can live in peace with one another and provide for themselves and their families.” He also mentioned working shoulder to shoulder, or “shona ba shona” in the Dari language, with our Afghan partners.

Finding Fulfillment
During my second deployment to Afghanistan, this time as the operations officer in a modular Quartermaster company, I figured out what had been missing from my first deployment experience. The 240th Quartermaster Supply Company was doctrinally structured to provide support to nondivisional units within the area of operations, including routine operations such as running a supply support activity (SSA), class I (subsistence) operations, class III (petroleum, oils, and lubricants) operations, and a water purification platoon.

As is generally the case with logistics units in this asymmetric conflict, we found ourselves adapting to the current mission and taking on non-traditional roles. One of those roles, supporting the Afghanistan National Security Forces (ANSF) partnership training, brought the company to embrace the shona ba shona mentality.

Directed from higher echelons and supported by the 129th Combat Sustainment Support Battalion (our higher headquarters), the company took on a variety of missions supporting ANSF partnership training.

In one location, we had Soldiers conducting a driver’s training course for an ANA logistics unit. What started initially as a one-time train-the-trainer class transformed into a flourishing training academy.

In another case, Army logistics Soldiers skilled in materials-handling equipment (MHE) trained their Afghan counterparts in all aspects of an MHE operation. The Soldiers taught the Afghan trainees proper preventive maintenance checks and services and the importance of taking care of their equipment. Every day, the Soldiers came prepared to cover important topics ranging from proper ground-guiding procedures and safe forklift operations to loading pallets of supplies onto trucks for delivery.

In another location, the company’s automated logistical specialist (military occupational specialty 92A) taught, coached, and mentored the Afghan National Police at one of their provincial supply points. Our Soldiers recognized the Afghan forces’ need to establish command supply discipline program that enabled the Afghan Police to have accurate inventories and historical records in order to see trends and plan ahead for future missions.

The 129th Combat Sustainment Support Battalion also helped the Afghan National Police to implement a trusted agent program in which each element that was supported by the supply point designated a trusted agent who was responsible for all transactions. This program aided U.S. Soldiers in identifying Afghan personnel involved in the supply chain and training them in supply principles.

Lastly, the company had the opportunity to send two representatives to be part of an operational mentor and liaison team for an ANA logistics battalion. The two senior leaders were assigned to mentor the battalion S–3 and S–4 sections. They helped the battalion to draw all of its organizational equipment and taught its soldiers hand receipt procedures and the principles of property accountability. The two mentors also conducted classes on the military decisionmaking process for the ANA battalion’s senior officers and trained the junior officers in troop-leading procedures.

The ANA battalion successfully completed its training, deployed to its area of responsibility and is providing first-class logistics support to ANA forces.

The lasting impact of our efforts was the puzzle piece missing from my first deployment to Afghanistan. Undoubtedly, the supplies that I helped to distribute during that first deployment helped children with their education or provided basic necessities, but for how long? The training in basic logistics functions and principles that the 240th Quartermaster Supply Company gave to Afghan forces will be used and passed down to other Afghan soldiers long after we are gone. Essentially, we have provided the ANA with an opportunity to become self-sufficient in providing seamless and professional logistics—the cornerstone for any military organization.

From water purification to property accountability and stewardship, Army logisticians have a vast range of training opportunities to offer the Afghanistan National Army. From my experience, the Afghan soldiers have been receptive and eager to learn but only from Soldiers who are genuine and sincere in their training efforts. I believe the Army has so many excellent logistics programs that could benefit the ANA. It remains to be seen how many of us are willing to work shona ba shona to make it happen.

CAPTAIN MICHAEL D. ANDERSEN is a prior enlisted Soldier who transitioned to the Ordnance Officer Corps through the Green-to-Gold Program. He holds a bachelor’s degree in geography with a minor in military science from Weber State University. He is a graduate of the Infantry and Ordnance Basic Officer Leader Courses.
The Complete Exchange of an MRAP Fleet During Stability Operations

By Captain George Autry

The 416th Transportation Company exchanged a fleet of Caiman mine-resistant ambush-protected (MRAP) vehicles for better protected Caiman Plus MRAPs while continuing operations in the Iraq Joint Operations Area.

A 416th Transportation Company Soldier rewires the exterior lighting on a Caiman Plus in the exchange shop. (Photo by SWI Reggie Medina, 416th Transportation Company)

The opportunity to exchange these improved vehicles finally arrived in May 2011 as the company’s parent brigade, the 230th Sustainment Brigade, began to exchange its entire inventory of Caimans for the superior Caiman Plus models. The 416th was responsible for exchanging 42 Caimans for the upgraded vehicles.

When the 416th Transportation Company out of Hunter Army Airfield in Georgia was sent to Kuwait for a 12-month deployment in October 2010, it left behind its fleet of M915 trucks and 7,500-gallon fuel tankers and fell in on a fleet of M1220 Caiman MRAP vehicles. The company’s new mission was to provide security for the convoys of its parent battalion, Joint Logistics Task Force (JLTF) 6. These convoys traveled from Kuwait into Iraq to points as far north as Camp Speicher, traversing some of the most hostile and dangerous routes in the Iraq Joint Operations Area.

Although the company was grateful for its Caiman MRAPs (a considerable improvement over the up-armored M1151 high-mobility multipurpose wheeled vehicles used in earlier deployments), the 416th wanted to upgrade to the M1230 Caiman Plus MRAPs. With additional side armor designed to reduce the impact of explosively formed penetrators, the Caiman Plus MRAP has increased survivability.

The opportunity to phase in these improved vehicles finally arrived in late May 2011 as the company’s parent brigade, the 230th Sustainment Brigade, began to exchange its entire inventory of Caimans for the superior Caiman Plus models. The 416th was responsible for exchanging 42 Caimans for the upgraded vehicles.

The Logistics Challenge

Any opportunity to increase the safety of Soldiers is a positive development and should be considered as such. However, significant challenges arose in the process of switching out the existing fleet. The main obstacle to the new vehicles’ immediate incorporation into the fleet was the state of their readiness when the 416th Transportation Company received them. Each new Caiman Plus MRAP was completely bare of the additional equipment required for operation, including improvised explosive device (IED) countermeasures, Blue Force Trackers, radios, antennas, global positioning systems, digital vision enhancements for night driving, exterior light sets, and basic-issue items.

According to the exchange plan, as each new Caiman Plus arrived at the unit, an existing Caiman’s equipment would be removed as needed and transferred to the new Caiman Plus platform. This single obstacle resulted in two secondary challenges: how to manage the logistics of the equipment transfers and how to minimize the impact on the company’s mission throughout the process.

The Exchange Process

Two alternatives were weighed for transferring the equipment from the Caimans to the Caiman Plus models. One option was to consolidate operations for the brigade in a central location by tasking Soldiers from the subordinate battalions to run an exchange shop, where they would pull equipment from Caimans and install it in the Caiman Plus models. The second option was to allow the mechanics of each convoy escort team (CET) company to transfer the equipment themselves in their own maintenance bays and complete the task according to their own schedules as operations allowed.

The final decision was to centralize operations. Although transferring equipment between vehicles seems straightforward, it proved to be a highly technical procedure, involving multiple components and wiring systems. A dedicated central team augmented the operators of each MRAP and provided consistency, a strong knowledge base, and maximum efficiency. A large bay in a sister battalion’s motor pool was set aside as an exchange shop. Operations at this dedicated site were run exclusively at night in order to avoid the intense heat of the Kuwaiti summer.
Once the exchange method had been determined, each organization involved in the process had a different role to play. Since the exchange shop was used by the entire brigade, the JLTF 6 battalion maintenance officer (BMO) controlled the flow of vehicles through the shop. A day or two before the exchange, the BMO would notify the 416th Transportation Company of the number of Caiman/Caiman Plus exchange pairs the company could bring into the shop and the time they were scheduled to arrive. Once the company received the order, its Soldiers prepared each Caiman, cleaning and emptying it of all nonessential equipment. Next, the platoon owning the prepared, fully loaded Caiman would move it and a bare Caiman Plus to the exchange shop on the day the BMO had specified. The Caiman/Caiman Plus exchange pairs would be secured at the exchange shop motor pool and left for that evening’s work.

As night fell and the exchange crews came to work, the Caiman pairs would be brought into the bay to begin the transfer. The bay could hold up to three pairs simultaneously, but two at a time was more common.

The vehicles were parked one in front of the other, and the teams would start by disconnecting wiring and unbolting, relocating, and reinstalling the equipment. A communications Soldier supplemented the many mechanics by testing radio systems and Blue Force Trackers. The crew then took care of the sensitive items on the MRAPs, ensuring that all necessary items transferred and stayed secure throughout the course of the exchange.

On average, three to four pairs of vehicles were exchanged each night. The crew at the brigade exchange shop was capable of moving all of the equipment with the exception of some IED countermeasures. Transferring those systems required the pair of vehicles to be brought separately to a specialized shop, where civilian contractors made the transfer. The battalion electronic warfare officer made shop appointments several days in advance, and it was the 416th Transportation Company’s responsibility to get the MRAPs to the shop for the appointments. Only after visits to both shops were the new Caiman Plus chassis deemed road ready.

The Time Factor

Competition with other brigade entities for slots within the necessary shops, combined with operational considerations, led to delays between each step in the process, from the company receiving each Caiman Plus to the transfer of equipment and systems. As soon as the pair entered the exchange shop, both vehicles were considered not mission capable and could not be used in operations.

Fortunately, the Caiman Plus vehicles were not delivered all at once. Instead, they arrived at a steady pace over a 3-month period. The 416th Transportation Company received its first Caiman Plus vehicles in late May 2011 and its last group at the end of August 2011. Each week, the brigade received a number of Caiman Plus MRAPs and divided them among battalions with CETs.

The battalions then distributed the newly arrived vehicles to their CETs. Because of competing requirements, the 416th did not receive Caiman Plus MRAPs every week, but when it did, it received, on average, five vehicles.

The biggest limiting factor in exchanging Caimans for the Caiman Pluses was the time it took to get each pair into the exchange shop. Caimans were often unavailable for exchange because they were being used on missions, and timeslots in the exchange shop were limited. Three to 10 days usually passed between the time a company picked up a Caiman Plus and the time the new MRAP and its counterpart Caiman entered the exchange shop.

Once the MRAPs were officially received into the shop, the process moved very quickly and took about 2 to 5 days.

Normally, the 416th supported seven CETs, but in order to accommodate the exchange process, the seventh team was stood down. This decreased the combat power available to JLTF 6, but it was unavoidable. The standing down of the seventh CET freed up the Caimans needed for exchange and freed up the personnel needed to move Caimans between appointments and to work on the exchanges themselves.

Each Tuesday, the JLTF 6 property book officer notified the 416th Transportation Company of the number of Caiman Plus vehicles the company would receive that week. Around midnight, a team from the 416th, made up of mechanics, supply and communications Soldiers, would inspect the new vehicles for serviceability.

By the end of the following week, a team of drivers and supply personnel would turn in stripped Caimans brought through the exchange process the previous week. The following day, the same team responsible for inspecting the new MRAPs earlier in the week signed for and acquired the vehicles. Concurrently throughout the week, the same team would get the vehicle pairs to their appointments at the necessary shops.

Lessons Learned

The process of exchanging a fleet of one type of MRAP for another was a rewarding challenge. But any units undertaking a similar challenge in the future may wish to consider some of the lessons the 416th Transportation Company took away from the experience.

Keep lines of communication open. It was vital that the company maintain communication at all levels throughout the process. The battalion BMO and company commanders needed to communicate about shop dates. The BMO and the company needed to communicate about exchange shop appointments, and the electronic warfare officer and the company had to do the same with the IED countermeasures specialty shop.

The operations cell needed to coordinate with the platoons to ensure that their old vehicles were prepared and moved to the right place at the right time. The company maintained communication with the battalion leaders, keeping them up to date on where each vehicle was in the exchange process.

Prioritize teamwork. In a process as complex as this, teamwork was essential. It was very important that all the players in this complicated ballet of exchanges knew their roles and fulfilled them. The process would not have been possible without the BMO’s coordinating appointments or the PBO’s notifying the company about pickup dates and quantities. The dedicated mechanics, operating the communications Soldiers, working in the exchange shop were likewise crucial to the success of the exchange.

Without the company operations section ensuring that enough Caimans were kept off the road and ready for exchange, the transfer would not have happened efficiently. The company’s supply shop played a vital part in picking up new Caiman Plus vehicles and turning in old Caimans. And finally, without the support of the battalion and brigade commanders, which allowed the 416th Transportation Company to stand down a CET, the exchange would not have been feasible.

Develop a system and track it. Although many times the 416th Transportation Company’s systematic process was not exactly followed because of active missions and other variables, having a system in place was extremely helpful. The system should be tracked very closely. The 416th’s operations section maintained a spreadsheet to track every Caiman Plus in the company, its current location, and its phase in the exchange process. This established system allowed the company to plan carefully and accurately to meet its obligations, enabling it to be proactive and prepared for the next step instead of becoming reactive and scrambling to meet the next deadline.

Centralize operations. While centralization was frustrating at times for those waiting for slots to become available, the efficiencies gained by centralizing the exchange shop yielded significant dividends in the end. Centralizing the exchange process was the right choice for the brigade for several reasons. Having a dedicated team and establishing a rhythm helped expedite the process. Moreover, if each company had been responsible for transferring the equipment of its own vehicles, each transportation company’s maintenance team would have lost considerable time, and the exchange process would have detracted from other duties.

Maintain flexibility. Although the system in place was well organized, the exchange was conducted during continuous stability operations. Sometimes Caimans would return from 10-day missions in the shop and be dropped off for exchange that night. Some exchange shop appointments were not filled because no Caimans were available for the exchange since they were out protecting convoys.

However, flexibility goes both ways. When slots were available, the 416th made every effort to take advantage of them, even on short notice; sometimes this required reacting quickly with limited personnel in order to move Caimans and Caiman Pluses whenever the opportunity presented itself.

Through communication, teamwork, planning, and flexibility, what could have been a very trying task for a company—exchanging a fleet of 42 vehicles while continuing to conduct stability operations—became manageable. In the end, the 416th Transportation Company gained a new fleet of significantly more survivable MRAPs to protect the Soldiers who were protecting our convoys.

Captain George "Chip" Autry is the commander of the 416th Transportation Company, 230th Sustainment Brigade. He has a bachelor’s degree in government from the College of William and Mary and is a graduate of the Infantry Officer Basic Course, Airborne School, and Combined Logistics Captains Career Course.

The 87th Quartermaster Detachment’s Joint Aerial Operations in Okinawa

BY CAPTAIN APRIL A. CAMPISE AND SERGEANT TERRANCE J. ALVAREZ

The 87th Quartermaster Detachment (Parachute) has served a unique role as the sole Active Army airborne unit in Okinawa, Japan, since 2005. The unit will inactivate as part of a scheduled Army drawdown in the Pacific theater this year. Made up of Army parachute riggers, the detachment is responsible for servicing and maintaining all equipment for aerial delivery contingency operations in Okinawa and the rest of Japan. Annually, the detachment packs and inspects an average of 14,000 pieces of aerial delivery equipment at Sagami General Depot, near Tokyo, and maintains hundreds of wartime contingency parachutes stored in Okinawa.

Operation Cobra Gold

Annually, the 87th Quartermaster Detachment participates in Cobra Gold, a bilateral exercise built around the exchange of military training and experience with the Royal Thai Army. During past Cobra Gold exercises, the detachment has built important and lasting multinational and joint relations with both the Thai Army and the U.S. Marine Corps stationed in Okinawa. The colocation of the two units has been a beneficial learning experience in joint operations for both services. Working closely with one another has enabled an exchange of experience and knowledge that has helped each service grow and learn from the other.

According to Army rigger Sergeant Terrance Alvarez, “Even though we have the same basic skill sets, there are differences in techniques the two branches use to accomplish the same task.” Marine riggers, for example, follow slightly different packing protocols than Army riggers. Each unit has its own strengths and weaknesses. The Marine riggers are known to be experts in heavy drops (loads greater than 500 pounds). Although Soldiers from the 87th Quartermaster Detachment also are proficient in executing the same containerized delivery, bundle, and platform drops, they have more expertise in static-line personnel drops. As a joint force, the units have relied on each other’s experiences to become better riggers overall. During exercises, Army jumpmasters work hand-in-hand with Marine jumpmasters to safely execute joint airborne operations.

For the past 3 years, the 3d Marine Logistics Group and the 87th Quartermaster Detachment have deployed paratroopers from Okinawa to Thailand to serve as the combined aerial delivery element in support of Operation Cobra Gold. For years, Marine and Army parachute riggers in Okinawa have been combining efforts to conduct joint parachute rigging operations in the Pacific. Historically, the riggers have executed a broad range of aerial operations, including packing and performing hundreds of day and night low-level static-line parachute and military free-fall parachute jumps. The riggers also have dropped more than 16,000 pounds of cargo, all of which hit the drop zone without a single malfunction or incident.

These missions have provided great opportunities for combined training and team building among the services and have helped to foster an enduring relationship among Army and Marine Corps riggers. All training conducted by the parachute riggers is executed with the safety of the community and participants in mind. All actions taken by the U.S. participants follow well-established safety procedures. This training remains essential for U.S. troop readiness, the mutual defense of Japan, and regional peace and security.

Advantages of the Joint Relationship

The joint relationship these units have built is rare and special for tactical-level parachute rigging operations. Working as a team has enabled both services to streamline their operations and obtain the most effective use of resources, funding, and training opportunities. Serving as a joint capability in Okinawa also provided a distinctive learning experience for Soldiers. According to Army jumpmaster and Quartermaster detachment noncommissioned officer-in-charge Staff Sergeant Terrance Alvarez, “It’s about getting people out of the bird safely and getting the equipment to the ground in one piece.”

Army and Marine Corps Collaboration

In October 2010, the 87th Quartermaster Detachment and the 3d Marine Logistics Group signed a memorandum of agreement to operate jointly out of one facility. Since then, both units have strategically combined resources and linked efforts on airborne operations and daily missions such as inventories and shop maintenance.

The colocation of the two units has been a beneficial learning experience in joint operations for both services. Working closely with one another has enabled an exchange of experience and knowledge that has helped each service grow and learn from the other. According to Army rigger Sergeant Terrance Alvarez, “Even though we have the same basic skill sets, there are differences in techniques the two branches use to accomplish the same task.” Marine riggers, for example, follow slightly different packing protocols than Army riggers. Each unit has its own strengths and weaknesses. The Marine riggers are known to be experts in heavy drops (loads greater than 500 pounds). Although Soldiers from the 87th Quartermaster Detachment also are proficient in executing the same containerized delivery, bundle, and platform drops, they have more expertise in static-line personnel drops. As a joint force, the units have relied on each other’s experiences to become better riggers overall. During exercises, Army jumpmasters work hand-in-hand with Marine jumpmasters to safely execute joint airborne operations.

When it comes to establishing and running a drop zone, standard operating procedures largely remain the same. However, Marine and Army riggers contribute to the shared operation by providing experience and input from their respective services. “Working with the Marines has provided me with insight into a different world of parachute rigging that I wouldn’t have otherwise been privy to,” said Army Corporal Edwin Bocanegra-Torres. “We reach the same end state, but the process we use for getting there can vary. I wouldn’t say one method is better than the other, but the Marines have definitely shared techniques and capabilities with us that we wouldn’t otherwise have been exposed to in a standard Army environment.”

The bottom line for both units is that as a combined force, they share the same overall goal. “When we conduct an operation together, it isn’t about being an Army Soldier or being a Marine; it’s about being a rigger,” said Army Specialist Kyle McNary. “It’s about getting people out of the bird safely and getting the equipment to the ground in one piece.”
A Soldier inspects another Soldier’s jump gear before a jump.

Sergeant Archie Gadsen, “Serving with Marine jumpmasters has been a broadening experience, and it’s unlike anything else I have done in the Army. We are better Soldiers and technical experts because of this experience.”

“The day I leave this island will be a sad day because this is the only place in the military where parachute riggers from the different services can work together, said Army Corporal Jorge Alaniz. “It’s been fun, I’ve made lots of friends, and I have enjoyed this opportunity to work with the Marines.”

When asked about serving with the Army riggers, Marine Corporal Elizabeth Myers said, “Out of my 5 years of service, [working with Army riggers] has easily been one of the greatest experiences I’ve had in that time. The Army riggers brought diversity to not only the job we do but also the daily work environment.”

This year, all personnel from the 87th Quartermaster Detachment will be reassigned to other units as the detachment inactivates. By official standards, this means the detachment is inactivating, many feel history has been made through this experience. As Staff Sergeant Gadsen put it, “The relationships that have been made between the Army and Marine parachute riggers cannot be replaced. Even with the unit inactivating, these friendships will last a lifetime, and the lessons learned will stay with us forever.”

Although the detachment is inactivating, many feel history has been made through this experience. As Staff Sergeant Gadsen put it, “The relationships that have been made between the Army and Marine parachute riggers cannot be replaced. Even with the unit inactivating, these friendships will last a lifetime, and the lessons learned will stay with us forever.”

The day I leave this island will be a sad day because this is the only place in the military where parachute riggers from the different services can work together, said Army Corporal Jorge Alaniz. “It’s been fun, I’ve made lots of friends, and I have enjoyed this opportunity to work with the Marines.”

When asked about serving with the Army riggers, Marine Corporal Elizabeth Myers said, “Out of my 5 years of service, [working with Army riggers] has easily been one of the greatest experiences I’ve had in that time. The Army riggers brought diversity to not only the job we do but also the daily work environment.”

This year, all personnel from the 87th Quartermaster Detachment will be reassigned to other units as the detachment inactivates. By official standards, this means the detachment is inactivating, many feel history has been made through this experience. As Staff Sergeant Gadsen put it, “The relationships that have been made between the Army and Marine parachute riggers cannot be replaced. Even with the unit inactivating, these friendships will last a lifetime, and the lessons learned will stay with us forever.”

Although the detachment is inactivating, many feel history has been made through this experience. As Staff Sergeant Gadsen put it, “The relationships that have been made between the Army and Marine parachute riggers cannot be replaced. Even with the unit inactivating, these friendships will last a lifetime, and the lessons learned will stay with us forever.”

The Three Most Common Electrical Safety Issues in Deployed Environments

The U.S. standard voltage of 120 creates problems for Soldiers deployed to countries where the standard voltage is 220. Ignorance and carelessness when working with these voltages can have disastrous results.

Electrical safety problems have bedeviled deployed U.S. military forces for many years. Since 2008, electrocutions and electrical fires in Southwest Asia have been front page news in the New York Times and leading stories on CNN. Electrocutons of deployed Soldiers were the focus of congressional hearings in 2009, and the Department of Defense Inspector General (DOD IG) conducted three investigations the same year to determine the scope of the problem and recommend solutions.

A key finding of the DOD IG report on electrical safety problems in Afghanistan was “a lack of education for service members regarding electrical safety, incident reporting, and personal responsibility.” (This report is available online at www.dodig.mil/SPO/Reports/D2009-SPO-005%20FINAL_web.pdf.) The report recommends training to resolve these issues and prevent future electrocutions, electrical shocks, and fires. This article, which draws on the author’s experience as a safety officer in Bosnia, Kosovo, Iraq, and Afghanistan, discusses the three most common electrical safety issues for forces deployed in support of overseas contingency operations: grounding, unauthorized power strips, and different voltages.

Grounding

Any safety professional or electrician who has worked overseas will immediately highlight poor or nonexistent grounding as the most serious electrical safety issue facing a deployed force. U.S. military units often occupy existing facilities that are wired to local standards, if such standards exist. Unlike the United States, Canada, Australia, or Western Europe, many areas in which our troops are located have little to no oversight to ensure electricians are qualified or certified. Grounding, which is generally considered by Western standards to be the most important aspect of electrical installation and operation, is not a common practice in many countries in Southwest Asia. This is partly because of the poor grounding qualities of sandy soil.

Color coding wires, a standard procedure in Western countries, is often ignored in Southwest Asia. In many cases, any available wire, regardless of color, is used. U.S. military and contractor electricians often have difficulty determining which wire is the ungrounded, grounded (neutral), or grounding conductor.

Actions by military personnel, usually caused by ignorance, compound the grounding problem. These
actions include snipping off grounding prongs on plugs, cutting and splicing electrical wires, jury-rigging or altering circuit breaker panels, and failing to properly ground generators.

The 3 January 2008 electrocution of Staff Sergeant Ryan Maseth of the 5th Special Forces Group while he was taking a shower in the Radwaniyah Palace Base Complex in Baghdad, Iraq, tragically highlighted the grounding problem. The hot-water heater, installed by Iraqi electricians before the arrival of U.S. forces, was not grounded, and the circuit breaker panel was inoperable. Staff Sergeant Maseth was electrocuted in the shower when a short in the water pump electrified the water. The stray amperage was not channeled to the ground through a grounding wire because one was not installed. Subsequent congressional hearings and DOD IG reports focused attention on the problem.

Unauthorized Power Strips

Although standard operating procedures in Iraq and Afghanistan mandate the countrywide use of electrical components approved by Underwriters Laboratories (UL), the Canadian Standards Association (CSA), or the European Economic Community’s European Conformity/Conformité Européenne (CE), poorly manufactured power strips continue to present major fire hazards in deployed environments.

The primary source for these unsafe power strips is China. The China Compulsory Certification (CCC) logo is intended to be a quality control standard. However, electrical power strips with the CCC logo have consistently been shown to be of poor quality and often catch on fire. Chinese power strips are usually made of very thin plastic, have internal metal components that quickly loosen with use, and have extremely small wire gauges that are unsuitable for the amperage the strip can draw.

This Chinese adapter has multiple sockets. Although these types of adapters are handy, they are poorly constructed and easily catch fire, despite the fuse built into the component. The fuse in this adapter did not prevent the fire.

Hundreds of fires have been caused by Chinese power strips. When multiple high-amperage items are plugged in, the strips often melt down and ignite a fire. Chinese manufacturers have become skilled at counterfeiting and applying UL and CE logos, frustrating safety and fire professionals when procurement personnel purchase items locally that appear to comply with the UL or CE standards.

The primary reason U.S. military personnel purchase and use Chinese power strips is their multiple-use outlets. Soldiers are familiar with the National Electrical Manufacturers Association type A and type B plugs, the standard American two-blade plug. (Type A has no grounding prong; type B has one.) Those who are serving or have served in Europe are familiar with the type C, E, and F prong-style plugs. (For an excellent summary of plug configurations, see http://en.wikipedia.org/wiki/Electrical_plug.) However, the type G, or British Standard 1363 plug, is widely used in Southwest Asia. Many soldiers are often mystified by the various plugs and outlets.

Although the Army and Air Force Exchange Service post exchanges carry only UL- and CE-approved power strips and adapters, many of the outlying operating bases and outposts have limited access to the safe, approved versions. Unfortunately, local vendors almost always carry the Chinese strips. Units in outlying areas have a vested interest in keeping money flowing through the local area, and most outposts have a small shop or two operated by local merchants.

Education, Training, and Oversight

The problem is twofold. As identified in the DOD IG report, the average military member is unaware of the different types of plugs and their capabilities and limitations. Removing grounding prongs and plugging 110-volt equipment into a 220-volt circuit are usually the result of ignorance, not a willful desire to break the safety rules. In many cases, an unsatisfactory response to the use of the unsafe Chinese power strip is, “It was there when I got here.”

The solution is similar to the grounding problem: education, training, and oversight. A proactive safety professional, with the backing of the commander to schedule time on the predeployment training calendar, is the key to educating and training Soldiers. After arriving in theater, periodic inspections by first-line supervisors, especially in living areas, will reveal if unsafe power strips are hidden and present a fire hazard. This problem also can be mitigated by purchasing and shipping UL-approved power strips and adapters before deploying. Pre-mission planning by the unit safety officer or staff engineer must include an assessment of the anticipated need for electrical power strips, which often can be met by stocking the supply CONEX (container express) with power strips before shipment overseas.

Above, this photo shows type E or F Europlug with ground. Types D, E, and F are very similar. Below, type G British Standard 1363 plugs are often found in Southwest Asia. A fuse below the red cover will blow and protect the circuit.
Different Voltages

With the completion of the military drawdown in Iraq, the 110 volts versus 220 volts problem has virtually disappeared since Iraq has a 220-volt electrical system and Soldiers in Afghanistan are usually on a 110-volt grid (even though the Afghan commercial standard—where there is electricity—is 220 volts). Base camps constructed by European nations usually use the 220-volt standard, so U.S. military personnel on those camps must be aware of the differences. Many Soldiers discovered the hard way during their initial deployment to Iraq that although a simple adapter will allow one to insert a U.S. blade-style type A or B plug into a two-prong type C, E, or F outlet, doing so can damage the equipment plugged into it. The primary casualties of this lack of knowledge were U.S.-built 110-volt-only printers, which were often fried by 220-volt outlets.

Virtually every unit experienced some kind of adverse event involving 220-volt outlets; most ended up with a smoking, burning piece of electrical equipment, with a dumbfounded private first class standing beside it wondering how he would explain this to the first sergeant. I personally witnessed a Soldier plug in a desktop computer without switching the red tab on the back of the computer without switching the red tab on the back, and within seconds the machine exploded.

From the 110 to the 220 setting, the wisps of smoke and audible pop were the result of the fuse blowing, protecting the machine as designed. It was quite a while before a replacement fuse could be ordered and sent from the United States, however, and the computer was useless in the interim. (The Soldier who made that error was a sergeant first class, not a private.)

The 101st Sustainment Brigade produced a 12-minute video summarizing these electrical challenges, which is posted at the Army Combat Readiness/Safety Center website at https://safety.army.mil/multime dia/VIDEO_LIBRARY/VideoPlayer/Tabled/421/Video eoid/213/Electrical-Safety-In-Iraq.aspx.

To prevent confusion, many units marked each outlet with “110 V” or “220 V,” but these labels or magic marker scribbles often fade or disappear over time. In one case, a contractor wired 220-volt service into an outlet with the U.S. type B blade-style plug-in, which caused a great deal of confusion and a few more fried components.

Step-up/down voltage transformers provide a solution, but the primary source for these appliances is—guess what?—China. After electricians employed by a U.S. contractor in Afghanistan inspected new locally-purchased step-up/down transformers, they were determined to be unsafe. Manufactured in China, they included a counterfeit CE logo carefully stenciled on the side. A visit to the company website revealed a link to the CE certificate—a handsome piece of paper with fancy script suitable for framing. It was counterfeit; there was no CE approval.

When an electrician checked the transformer schematic posted on the website, he determined that the ground was insufficient and the product presented a serious fire and shock hazard. A Google search for “unsafe Chinese transformers” reveals a wide variety of perspectives, with most experts advising caution when purchasing Chinese electrical products and many highlighting the widespread counterfeit certification problem.

The primary solution to the 110 volts versus 220 volts problem, again, is education and training. Soldiers must be trained on the differences between the two electrical systems. The hazard of using adapters is a key part of this education process, and marking outlets is an excellent practice. Determining whether a step-up/down power transformer is suitable for use is a more difficult problem. A blanket rule of “don’t buy Chinese products” is not feasible since most Chinese goods are safe despite widespread publicity to the contrary in recent years. Purchasing American-manufactured transformers ensures excellent quality control, but they are difficult to find because they are not in high demand in the United States.

Most electrical safety issues in deployed environments can be solved with education and training. U.S. military personnel who have not been stationed overseas do not normally have extensive exposure to different electrical systems. Many are completely unaware that other countries have different voltages. Few know about UL or CE certifications. The addition of full-time civilian safety professionals on brigade staffs creates an excellent resource for educating and training Soldiers on these key issues.

Training must not begin when Soldiers arrive in theater; it must be part of the predeployment process. Since the weeks before deployment are a blur of activity command emphasis may be needed to ensure that time is set aside for electrical safety training. Periodic refresher training sessions while deployed sustain awareness and combat complacency. Procurement personnel and S-4s also must be educated about the UL and CE certification requirements because they should be able to cut off local purchases that provide an entry route for unsafe electrical equipment.

Last and most importantly, unannounced inspections of living and work areas will identify unsafe practices and eliminate unsafe electrical components. First-line noncommissioned officer leadership and supervision, with the continuous assistance of safety professionals, is the key to successful mitigation of electrical fires, shocks, and electrocutions.

James E. Jennings is the safety officer for the 101st Sustainment Brigade. A retired lieutenant colonel in the Army Reserve, he holds a bachelor’s degree from the United States Military Academy and a master’s degree from California State University, Dominguez Hills. He has deployed to Iraq once and to Afghanistan twice as the safety officer for the 101st Sustainment Brigade. He is a certified safety professional and was named the American Society of Safety Professionals’ Safety Professional of the Year in 2009.
LaLogistics and Analysis in the Science of War

Studies conducted by the Army Materiel Systems Analysis Activity are making significant contributions to improving logistics operations.

The analysis of warfare is not new and in fact has been occurring for centuries. More than 2,000 years ago, the Chinese military theorist Sun Tzu took analysis of war seriously enough to put his thoughts down in writing. In the 19th century, two great military theorists, the Swiss-born Antoine-Henri Jomini and the Prussian Carl von Clausewitz, also analyzed war, including the question of whether war was more of an art or a science. Clausewitz, in the end, determined that war was a gamble and that factors like the “fog of war” and “friction” do not allow war to be completely driven by science. (Friction is what Soldiers today call “Murphy.”) Jomini originally thought that the practice of war, like other disciplines, could be broken down into solid, rational principles that, if followed, would produce success on the battlefield. Ultimately, Jomini seemed to realize that such analysis was not very realistic and that war was both science and art.

However, this article is not meant to reignite the Clausewitz versus Jomini or the warfare art versus science debates. My real purpose is to demonstrate that by using some of the Army’s current analytical capabilities, scientific principles can be applied to the study of battlefields and peace-time logistics. The use of these objective methods would have been appreciated by Jomini because he was one of the first great theorists to actively consider scientific principles can be applied to the study of battlefields and peace-time logistics. The use of these objective methods would have been appreciated by Jomini because he was one of the first great theorists to actively consider scientific principles that, if followed, would produce success on the battlefield. Ultimately, Jomini seemed to realize that such analysis was not very realistic and that war was both science and art.

Deployment of Analysts in Southwest Asia

One use of analysis in logistics has been AMSAA’s FS’ deployment of analyst to Iraq, Kuwait, and Afghanistan. These analysts provide logistics analysis support while deployed in support of Army field support brigades (AFSBs). AFSBs provide the critical interface between the materiel enterprise and the warfighter. Currently, the 401st AFSB is in Afghanistan and the 402d AFSB is in Kuwait after leaving Iraq. However, the 402d does continue to support the Department of State mission in Iraq. The 402d deployed analysts to Iraq in September 2006 and to Afghanistan in August 2008 on a rotational basis.

FBS analytic capabilities have led to logistics improvements through studies such as the following:

Fire suppression systems. During 2007 and 2008, fire suppression systems in combat vehicles in Iraq were experiencing premature discharges that made vehicles not mission capable, which in turn degraded combat power. FSB’s Steve Webb was attached to the 402d AFSB and conducted an analysis that helped to resolve this problem. For his efforts in this and other studies while he was deployed, Webb received one of the Army Materiel Command’s 2009 Louis Dellamonica Outstanding Personnel of the Year Awards.

Tactical wheeled vehicle power draw. A tactical wheeled vehicle (TWV) power draw study was used to determine if the electrical load on various TWVs was too large for their design specifications and, if not, how much “head room” remained for potential future items to be installed with an additional increase in power draw.

Stryker temperatures. Temperature data collection and analysis of Stryker armored vehicles in Iraq helped lead to the installation of air-conditioning. The data were collected by AMSAA analysts and compared to Army Public Health Command data showing that temperatures in Strykers could exceed those the human body could withstand. Using a $45 sensor to collect temperature data yielded more than $20 million in funding to support compartment cooling redesigns in Strykers and tracked vehicles.

These analyses, backed up by data, helped to provide solutions that prevented the degradation of combat power. Such degradation affects lives and resources. As the Army moves into an era of scarcer resources, resource conservation will become even more important, and data-driven analysis should lead the way.

AMSAA’s Mission

AMSAA, located at Aberdeen Proving Ground, Maryland, is the Army’s materiel analysis organization. Although other analytic organizations focus on tactics, strategy, and lessons learned outside of the materiel realm, examining the materiel aspect of the Army’s functions is the driving force behind AMSAA’s mission.

FSB focuses on the analysis of logistics systems, processes, and materiel. This analysis is conducted by engineers, operations research analysts, mathematicians, and other personnel in objective disciplines. FSB supports the logistics aspects of Army warfighting by providing the types of scientific analysis that Jomini could only dream of.

The Office of Personnel Management classifies operations research and systems analysis (ORSA) as career series 1515 and states, “The primary requirement of operations research work is competence in various methods of scientific inquiry and analysis rather than in the subject matter of the problem.” The military officer equivalent to the civilian 1515 series is functional area 49. The entire AMSAA workforce, other than the deputy director, who is a colonel, consists of Department of the Army (DA) civilians and contractors.

AMSAA FSB maintains a presence at most Army locations worldwide and uses contractor personnel to collect data. FSB DA civilians and contractors analyze the data for presentation to senior leaders as required. This in turn helps senior leaders to make Army fleet-wide decisions in such areas as new acquisitions, capitalization, and reset.

Unit maintenance personnel and other vested parties outside of the Army’s senior leadership also can request and use the collected maintenance data. Such analytical capabilities allow leaders to make tactical, operational, and strategic-level decisions that affect logistics operations on the battlefield supported by actual data. Sample maintenance data can be used to make better informed decisions.

An example of how SDC data help leaders make informed decisions is manpower requirements criteria (MARC), which are used when building or updating Army unit modified tables of organization and equipment (MTOEs) or tables of distribution and allowances (TDAs). An accurate, data-driven analysis of the true labor hours needed to perform maintenance will result in a more realistic MTOE or TDA. Data can also help illustrate the impacts of any maintenance actions, whether scheduled or unscheduled, on vehicle downtime.

Condition-Based Maintenance

Another analysis program under the SDC program that enhances Army combat power is the AMSAA condition-based maintenance (CBM) program. This program grew out of the larger Department of Defense CBM initiative, which was designed to make maintenance practices more prognosis-driven. Ultimately, CBM’s goal is to focus maintenance more on responding to the actual condition of equipment than on simply performing services at fixed intervals. The result will be more maintenance dollars saved and fewer mission failures caused by equipment breakdowns.
In 2006, AMSAA FSB began installing instrumentation devices on most TWV variants throughout the world, these TWVs operate in different climates and terrain and with different usage profiles. The instrumentation devices collect critical data points for analysis from the vehicles J1939/J1708 sensor network. Additional data are received from other instruments feeding into the data recorder, such as accelerometers and global positioning systems devices installed on the vehicles. The data are then collected and analyzed to look for any outcomes that can help to support CBM goals.

One such analysis matches the SDC maintenance records with a CBM-instrumented vehicle. Provided a mechanical failure occurs during the data collection period, analysts try to determine predictive algorithms that match the maintenance records with the sensor data on that particular failure event recorded from the instrumentation devices. The goal is to use any developed algorithms to predict the future better and thus prevent mechanical failures before they happen. The hope is that this will mitigate mission failure causes by mechanical issues.

While much work remains to be done in this area, the usage data analysis has already provided returns. One such area is in reducing the fuel consumption caused by high idling rates among TWVs operating in Iraq and Afghanistan. The high idling rates have interested senior leaders as a potential cutting fuel costs in a resource-conscious Army. For example, as a result of the CBM analysis, Product Manager Heavy Tactical Vehicles will soon refit some line-haul trucks with tactical re-line-reduction systems.

Like SDC itself, the CBM data analysis has numerous other benefits. These examples serve as a demonstration of the usefulness of CBM data analysis in making better-informed logistics decisions for the Army’s vehicle fleets and equipment.

**AMSA Materiel Lessons Learned Analysis**

Another subcomponent of the SDC program is AMSAA Materiel Lessons Learned Analysis (AMLLA). This is a program that identifies systemic maintenance issues that can be resolved at the lowest level possible. The AMLLA program uses SDC contractor personnel to gather data “on the ground” and research systemic failures firsthand. Using reach-back capability, AMLLA analysts can then apply the full range of AMLLA capabilities to the problem, such as using modeling and simulation to conduct “what-if”-failure analysis and determine how failures are occurring.

These three examples resulted from analysis of Stryker platforms.

A coolant hose ruptured, spraying hot coolant on the vehicle’s passenger. As a result of the analysis, General Dynamics Land Systems agreed with AMLLA’s recommendation and implemented short-term changes suggested by the steering manufacturer (TRW Automotive) as a high-priority way to improve durability.

The bolts on the mounting for the Stryker driver’s hatch were gouging supplemental armor and would not allow the hatch to open all the way. After AMLLA analysis, General Dynamics Land Systems implemented engineering design changes.

The telescoping steering column mechanism of the Stryker vehicle was seizing. After AMLLA analysis, General Dynamics Land Systems recommended implementing design changes. Given the high pace of current operations, the absence of the AMLLA process likely would have led the types of systemic failures in the “just deal with it” category.

However, that approach would have affected missions because the failures could have adversely affected safety, morale, or lives.

After serving in Afghanistan as a deployed AMSAA representative from August 2010 to February 2011, I appreciated the role played by analysts in trying to affect the warfight. Most noticeable was the use of ORSA analysts in combat support roles, such as counter improvising explosive devices, and in social demographic work, like determining election results. Surprisingly, I found that very few ORSA analysts knew much about theater logistics or what an AFBS was. Very little rigorous analytical support such as ORSA was evident in addressing logistics concerns.

The logistics aspects of current operations offer no shortage of work for analysis. Based on my experience, some logistics areas that I believe are candidates for further analysis include new equipment fielding processes, Afghanistan intratheater aviation transportation, dining facility efficiency (including the convoys that supply them), forward operating base traffic patterns, and noncombat unit utilization and workload ratios.

It is rather easy to demonstrate the need for analysis of both the use and the science application in that area. In particular, given modern advances in technology and the logistics tail needed to support them in an increasingly budget-constrained environment, there is an area in which analysis can pay huge dividends. It appears that now is the time to focus more of our analysis capabilities on logistics to prevent combat loss in the future Army.

**A Road to War for Reconnaissance Squadron Forward Support Companies**

BY CAPTAIN JEREMY P. BROWN

E very 4 to 6 weeks, a forward support company (FSC) attached to a reconnaissance or cavalry squadron goes to the National Training Center (NTC) at Fort Irwin, California, to validate its past 12 to 16 months of training in preparation for a deployment.

Unfortunately, the FSC arrives with the mindset that sustainment operations should be centered on the forward operating base (FOB). Because of that mindset, the Soldiers miss opportunities to learn what requirements are needed for the Army’s “next” mission.

That next mission is about to come to fruition. We combat trainers at NTC are currently focusing on how we migrate to hybrid threat rotations. The scenario will not only incorporate the traditional force-on-force scenario similar to pre-2003 training events, but it will also blend in the elements from counterinsurgency (COIN) operations.

The return to the force-on-force portion of the scenario is the main concern. Are logisticsians prepared for this? Have they been trained on contracting to FOB logistics, and other “current fight,” COIN-centric logistics operations? Have we missed the core competencies that have sustained our Soldiers for over 100 years? Why do many of the logisticsians who rotate through NTC not understand the doctrinal missions of the reconnaiss ance and cavalry squadrons? Should we change our curriculum to match this transition?

**Logistics Command Relationships**

We logisticsians must first understand exactly who we support. One of the greatest challenges to this understanding is the problem of doctrinal task organization between the FSC and the brigade support battalion (BSB). According to Field Manual (FM) 4–90, The Brigade Support Battalion, the FSC is organic to the BSB and may be attached to or operationally controlled by one of the maneuver battalions for direct support. Each command relationship has a very different decision authority. That relationship is a seam that must be addressed through mission analysis. That relationship is a seam that can be exploited, just as the enemy likes to exploit seams between units on the ground.

The relationship between the FSC and the BSB is tenuous at times. The FSC commander should be considered similar to a liaison officer (LNO) from the BSB. He is the eyes and ears of the support operations officer (SPO) and the maneuver battalion commander. His ability to tie the SPO’s concept of support into the squadron’s scheme of maneuver is critical. The FSC commander, however, must absolutely know how his supported unit maneuvers and how the brigade sustainment plan ties into it. This understanding allows for a plan that is tied to the principles of sustainment.

The squadron S–4 should work hand in hand with the FSC commander to plan sustainment for the squadron. The S–4 is charged with developing the plan, but the FSC commander should be heavily involved to ensure adherence to the principles of sustainment.

**Supporting Reconnaissance Squadrons**

A reconnaissance or cavalry squadron is an evolving entity. [Reconnaissance squadrons are found in brigade combat teams and battlefield surveillance brigades, and cavalry squadrons are found in armored cavalry regiments, but they serve similar functions.] It has a very crucial doctrinal mission. FM 3–20.96, Reconnaissance and Cavalry Squadron, describes the squadron in this way:

- It provides a significant dismounted or mounted command and control capability.
- It enables the higher commander to decisively deploy his maneuver forces and joint fires and to choose times and places for engagement to his advantage.
- It maximizes security of the higher headquarters by providing timely, accurate, and relevant combat information. It helps the higher commander achieve advantages over an enemy or adversary in terms of the ability to collect, process, and disseminate information.

How do we logisticsians frame our mission analysis and support planning into these broad operational titles? How do we plan for class III (petroleum, oils, and lubricants) and class V (ammunition) to move forward with the potentially rapid advance of the brigade’s reconnaissance assets?

The answer is simple. We are directly tied into the military decisionmaking process (MDMP) at the squadron level and essentially become the cavalrymen we support. We do not focus solely on getting the supplies to the unit. We accept that resupply operations are a no-fail mission, but we need to understand and feel the operational envi-
the squadron’s mission set is critical. FM 5–90, Tactics, states—

“The seven command pillars of successful sustainment operations are as follows:

- Ensure continuous reassessment.
- Establish the command and control assets in reserve.
- Orient on the reassessment objective.
- Report all information rapidly and accurately.
- Retain freedom of maneuver.
- Gain and maintain enemy contact with the smallest element possible.
- Develop the situation.”

How do we maintain our supply lines as they perform operations to apply these fundamentals? Are logisticians used as the enabler that we are, or are FSCs not given the priority as that enabler? Too often during NTC rotations, we find FSCs performing operations to center mission and mayoral responsibilities that cripple its ability to perform its wartime mission. Because of that, the FSC is rarely in a position to be proactive in resupply and struggles with reactive sustainment. These are a few of the considerations that the FSC commander and squadron S–4 need to address before the MDMP begins.

The squadron commander and S–3 are concerned with the training, operations, center mission and mayoral responsibilities that affect a mission’s sustainment. They are all priorities. So which one has priority over the other? How are they applied? The FSC commander and squadron S–4, in synchronization with the SPO, have to tailor their support plan to each of these principles, but the scheme of maneuver ultimately dictates the way forward.

During the Combined Logistics Captains Career Course, company commanders learn the art, not the science, of contiguous battlefield sustainment. The course, culminating with the tactical logistics exercise, teaches on exactly the things that most sustainers do not remember about contiguous battlefield sustainment. One of the benefits of the tactical logistics exercise is the ability to understand each of the missions of the reconnaissance squadron and how we conceptualize sustainment as it fights.

It is imperative that logisticians understand how reconnaissance assets affect tactics at points. What is across the squadrons and how sustainment assets moving to support it? This question can and should be asked at all echelons during the mission planning.

Reconnaissance Squadron FSCs

The reconnaissance and cavalry squadron FSCs are the tip of the sustainment spear. FM 4–0, Sustainment, lays out the following principles of logistics:

- “Integration is the most critical principle. Integration is joining all the elements of sustainment (tasks, functions, processes, and organizations) to operations assuring unity of purpose and effort.”
- “Anticipation is the ability to foresee events and requirements and initiate necessary actions that most appropriately satisfy a response.”
- “Responsiveness is the ability to meet changing requirements on short notice and to rapidly sustain efforts to meet changing circumstances over time.”
- “Simplicity fosters efficiency throughout the operations process and allows for more effective control of sustainment. Clarity of tasks, standardized and interoperable procedures, and clearly defined command relationships contribute to simplicity.”
- “Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a mission.”
- “Economy means providing sustainment resources in an efficient manner to enable a commander to employ all assets to the greatest effect possible.”
- “Survivability is the ability to protect personnel, infrastructure, and assets from destruction or degradation.”
- “Continuity is the uninterrupted provision of sustainment across all levels of war.”
- “Improvisation is the ability to adapt sustainment operations to unexpected situations or circumstances affecting a hybrid, operations, that tactical knowledge becomes the single most important factor for logisticians. If we logisticians cannot secure or understand our place in the lines of the operation, how can we get the right stuff to the right places at the right time? Numerous questions—besides anything having to do with classes of supply—need to be asked and integrated into the plan.

The next observation concerns logistics synchroniza-
tion among the brigades 5–4, BSB SPO, FSC commander, and squadron executive officer and S–4. The ability to synchronize the sustainment mission to the current operation plan alleviates many of the hurdles that the FSC commander would face. That ability hinges on whether or not he understands what exactly the squadron is doing. What are the triggers for our logistics packages (LOGPACs)? How are they used? Is the logistics commander aware of the combat trains and the triggers that they consider in their mission planning.

The highest priority that the Army Training and Doctrine Command needs to consider is the Soldier training publication tasks. Most logisticians at the FSC level have either not experienced or do not remember what a contiguous battlefield looks like and how sustainment operations are conducted on it. Who is responsible for the combat trains? Who is responsible for the security of those trains? What are the major criteria for site selection? Where is the FSC commander located during all of this?

As logisticians, our training must be driven from the bottom-up as much as our operational plans are. We need to be fully aware of the situations that the command can create or replicate. For example, “Maintenance Monday” may be the main task, but it can be executed under simulated combat conditions. LOGPACs and recovery battle drills can be rehearsed by taking full control of the simulation. The need is to do more.

We can maximize range time by making Soldiers shoot under stressful conditions. How will they react to a complex attack with an improvised explosive device or a rocket-propelled grenade attack and small-arms fire? We should replicate at the ranges as best we can. The situation training exercise lanes at NTC can be replicated at any home-station field training exercise. Role players can be identified and integrated, and most battlefield effects simulators used at NTC are in the Army supply system. We should not wait until the NTC rotation to start from scratch on tactical standard operating procedures and LOGPAC battle drills.

Effective sustainment operations are a no-fail mission in the Army. Efficient sustainment operations are our goal. We can achieve our goal by truly knowing and understanding who we support, taking care of the Soldiers who execute that support, and accomplishing our mission to provide support.
“Fueling the Team” for Better Health and Performance

Providing nutritious meals that are easy to make and that customers enjoy is the goal of a new program underway throughout U.S. Army Europe.

U.S. Army Europe’s (USAREUR’s) Fueling the Team program is aimed at helping Soldiers, Department of the Army civilians, and family members across Europe eat healthier to improve their performance and their lives. The program involves a variety of agencies that are working together to transform what is on the menu in the 24 Army dining facilities in Europe and to teach the USAREUR team how to make healthy food choices all of the time.

As the agency that oversees Army dining facilities in Europe, USAREUR’s logistics directorate is responsible for the Fueling the Team program. Although it is USAREUR’s program for now, the hope is that what is learned in Europe will become the model for the entire Army.

Origins

Fueling the Team has its roots in the Army’s Soldier Fueling Initiative, a program started by USAREUR commander Lieutenant General Mark Hertling when he was deputy commander of the Army Training and Doctrine Command. Under the Soldier Fueling Initiative, dining facilities at a dozen basic training locations across the United States were reshaped to provide healthier meals designed to boost Soldier performance.

Chief Warrant Officer 4 James Donaldson, the USAREUR Fueling the Team program director, said the Army’s Soldier Fueling Initiative is a good model for basic training units, where diners are trainees who can eat only in their unit dining facilities. However, it does not quite fit the broader Army, where Soldiers can easily opt for fast food over dining facility fare. That is why USAREUR’s fueling program has taken that basic training model and modified it for the Army community beyond basic.

Breaking Out of the Comfort Zone

The Soldier Fueling Initiative removed deep-fat fryers from dining facilities without consulting dining facility staff, but Fueling the Team has left the decision to remove deep-fat fryers to dining facility managers.

Challenges

Fueling the Team challenges food service personnel to think about those meals. When customers know upfront what they are getting, they can more easily make solid food choices.

“In a garrison environment, we have to make it more competitive and allow the managers to think about what they are doing,” Chief Donaldson said.

He explained that deep-fat fryers have provided a comfort zone to dining facility managers because they can quickly prepare french fries or other backup items when the dining facility runs out of what it planned to serve. However, the Army and the larger American society are moving away from fried foods, and food service personnel have to get used to new processes and workflows.

French fries that took 3 to 4 minutes to cook in a deep fryer, now take 10 to 15 minutes to bake.

“This process initially takes us out of the comfort zones of what we are used to, or taught to do,” Chief Donaldson said. He explained that the workforce has to be reeducated, and changes to the thought processes of dining facility managers and personnel are required.

Personnel will now have to spend a little more time planning menus and costing out plates and meals to ensure that they still stay within the Army budget.

Fueling the Team challenges food service personnel to analyze how they can conduct business better and provide diners with nutritious meals and nutrition information about those meals. When customers know upfront what they are getting, they can more easily make solid food choices.

Serving lines are being set up in ways that encourage diners to choose more nutritious dishes, and the Army “Go for Green” labeling system designates foods as red, yellow, or green based on their nutritional value.

In addition to replacing deep-fat frying with other cooking methods, some challenges to making healthy meals have arisen, including the ability of food service programs to get the ingredients and equipment needed to create new menu items. Chief Donaldson said it sometimes takes months to get supplies to Germany that can be in stateside dining facilities in a week or two.

Changing a Frame of Mind

“Some of the changes are the changes within our thought process and creativity, to include our menus, our production, and management,” Sergeant First Class Cheavlier Slaughter said. “Some of the changes are the changes within our thought process and creativity, to include our menus, our production, and management.”

Sergeant First Class Cheavlier Slaughter managed the dining facility at the Miesau Army Depot in Germany when Fueling the Team was put in place. He said the toughest part about bringing healthier meals to his diners is that it takes extra effort to come up with creative ways to manage the program and bring to the menu appealing new dishes that are healthier than past dining facility fare.

“Some of the changes are the changes within our thought process and creativity, to include our menus, our production, and management,” Sergeant First Class Cheavlier Slaughter said. “Some of the changes are the changes within our thought process and creativity, to include our menus, our production, and management.”
Variety and Creativity: Keys to Success

Captain Brooks admitted that there is a tradeoff in the fueling program because removing all the so-called “bad food” from dining facility menus could drive diners away. He said the program is about offering healthy alternatives, not simply deleting less healthy options.

“Our usually try to offer a variety, so that it’s not all green,” said Captain Brooks. “We are not trying to get rid of all the fried food, but we are trying to offer healthier choices so that the customer has an option if they want to eat healthy.”

Dining facility staffs have begun competing to see which facility can go the longest without using its deep-fat fryers, and other initiatives are prompting patrons to eat healthy.

“We want diners to notice all the changes we’ve actually done,” said the dining facility manager. “We took the deep-fat fryers out of our dining facility, and our fried chicken is not fried any more. We bake it in the oven, and to my surprise our customers didn’t notice it.”

“Of course [the program’s] success makes the Soldier see how good healthy food can be. A not-mission-capable piece of equipment is loaded onto a trailer for transport from Forward Operating Base Hammer to Victory Base Complex.”

BY MAJOR JEREMIAH O’CONNOR

Army sustainment engineers and field commanders are tasked with ensuring mission readiness. While this can be challenging, it’s an essential part of the mission. Engineer officers and their teams must maintain a constant focus on their mission’s objectives and work towards achieving them.

The team must be prepared to face any challenges that may arise and be ready to adapt their plans as needed. The team must be flexible and able to adjust their approach as necessary to ensure mission success.

However, the team must also be aware of the potential for accidents and injuries to occur during their work. They must take measures to minimize the risk of accidents and injuries and ensure the safety of their personnel.

This includes ensuring that the team is properly trained and equipped to handle any emergencies that may arise. It also includes following established safety procedures and protocols.

The team must also be aware of the potential for accidents and injuries to occur during their work. They must take measures to minimize the risk of accidents and injuries and ensure the safety of their personnel.

This includes ensuring that the team is properly trained and equipped to handle any emergencies that may arise. It also includes following established safety procedures and protocols.

Overall, the team must be prepared to face any challenges that may arise and be ready to adapt their plans as needed. The team must be flexible and able to adjust their approach as necessary to ensure mission success.

A not-mission-capable piece of equipment is loaded onto a trailer for transport from Forward Operating Base Hammer to Victory Base Complex.
In isolation, the contributing factors would not likely have caused an accident; combined, the hazards resulted in catastrophe.

The stories frequently told by Soldiers about catastrophic events highlight inexperienced leaders in unfamiliar environments with improperly trained and supervised Soldiers using poorly maintained equipment. This reality emphasizes one of the major shortcomings of the RMW: Instructions for completing the worksheet state that the overall risk for a mission is determined by the hazard that has the highest residual risk. This would place a mission with five hazards having a residual risk of medium at the same risk level as a mission that has only one hazard with a medium risk level. Clearly, these two missions do not have the same risk level, yet there are no concrete procedures for addressing the increased risk of the first mission.

To address this shortfall, the instructions for the RMW should include a requirement to upgrade mission risk to the next level if the mission has four or more hazards at medium or high levels. Missions with low residual risk should be excluded because all of the hazards will have a residual risk of low. A mission with four medium-level risks should be upgraded to high because of the effects of combining risk. This informs the next-level authority of the level of difficulty of the mission with respect to the importance of the mission. That authority then may choose to bring more resources to bear, postpone the mission, or direct execution of the mission. Without specific guidance on the mission’s importance. Determination of hazard severity and probability is largely a judgment call by experienced leaders using subjective criteria. This method takes advantage of that experience and improves leader visibility of elevated risk missions.

Laundry List of Hazards and Controls

The next negative practice is the inclusion of a laundry list of hazards and controls. This often results in a three- to five-page RMW. While long RMWs make leaders feel more comfortable about all of the risks being addressed by controls, they do not result in safer operations.

I frequently found that critical hazard controls were buried under trivial ones. During my tour, a convoy commander often read off a long list of hazards and controls at the end of an already long convoy brief. Few Soldiers listened to the litany of hazards and controls. Some of this was due to the repetitive nature of the missions, but some of it was also due to human limits for information retention.

Within the safety brief, the list of controls included actions such as rehearsals that were already complete and the designation of a hazard management rank of the leader of the convoy. Reiterating these controls provided information that the Soldiers did not need and initiated the mental trigger for the next step paying attention. Also on the list were many known standards and regulations. Reinforcing the most relevant standards for a mission has significant value, but an extensive list has the opposite effect and negates any intended emphasis. As a result, Soldiers may have successfully executed the controls that prevent minor accidents but neglected the controls that prevent catastrophe.

The Soldiers and leaders did not intend to execute some of the controls. I believe the primary cause for this trend was the dilution of emphasis and competition among the laundry list of tasks on the RMW. It is the approval authority’s responsibility to provide clear, prioritized instructions free of nuance. The current form of the RMW does not set the conditions for this.

Foundation for Accident Prevention

Although long risk assessments address every conceivable risk, they fail to provide a foundation for preventing the most serious accidents. The solution to this situation is twofold.

First, conduct a thorough risk assessment. Prioritize the list of hazards based on residual risk. Controls identified in the planning and preparation phase of the mission should be executed. Selecting the right level of leader for the execution of the current mission and conducting rehearsals are all essential elements to successful mission execution and should be part of company standard operating procedures. Rehearsals in particular aid in developing the subconscious execution that is so critical to effective units. These controls, however, need not be reinforced in the mission brief if they are already completed. This leads to the secondary component of the solution.

During the mission brief, the controls requiring specific Soldier actions during execution, particularly those that are not routine, are the residual elements of the RMW. I call this component of the RMW “the execution list.” Soldiers and noncommissioned officers already have tremendous amount of information to process, and it is critical that they do not receive any that is unnecessary.

The number of hazards for a specific activity should be limited to seven on the execution list. This facilitates greater emphasis on the most salient hazards. It also provides leaders with specific areas on which to focus.

Research shows that it takes many repetitions of a task to make it subconscious. Limiting the number of hazards to seven improves the probability that Soldiers will listen to, remember, and execute the controls and that leaders will enforce them.

As specific controls are repeated and enforced over multiple cycles, nonprogrammed behaviors become programmed. Once a control becomes habitual, remove it from the RMW. Moving specific hazards to the second highest priority on the list results in a dependent ratcheting down of risk over time.

The approval authority should approve missions based on the full list of hazards and controls and validate the top seven hazards on the execution list. This will allow leaders to address lower risk hazards with specific controls in the mission planning phase while preventing the dilution of the most critical controls during execution.

Reused RMWs

A secondary effect of long RMWs is the copying of risk assessments from previous missions without performing mission-specific analysis. During my tour, I required handwritten RMWs from leaders to combat this trend. Convoy commanders frequently handed the battalion commander risk assessments that contained hazards irrelevant to the current mission. Most officers have seen RMWs for interoperations that included hot-weather injury risks. While limiting the number of hazards for the execution list will not eliminate the tendency to reuse RMWs, it causes leaders to think harder about which hazards and controls are on that list.

RMW Approval

The last habit to be addressed is the timing of the completion and approval of the RMW. One of the key characteristics of risk management is that it is a continuous process. The current Army culture surrounding risk management involves a single evaluation that is rarely modified or reevaluated as the mission progresses through planning and execution.

One of the lessons I learned as an approval authority was that reviewing the RMW the day of the mission did not provide the time needed to make adjustments. As mission execution gets closer, fewer risk control options are available. Identifying specific leaders for more difficult missions, rehearsals, and equipment inspections is a critical control that is not available as time runs out. Mission changes in this timeframe result in greater risk as leaders include unplanned activities in their timelines. This stress before execution often leads to confusion about priorities and results in the neglect of other control risks. A leader racing out to notify Soldiers of modified timelines close to execution also causes subordinates to lose confidence in him.

The corresponding problem with completing the RMW too early is that conditions on the ground, such as enemy and weather, can change significantly or new hazards can emerge before execution, affecting mission risk. The solution to this problem is to include boxes on the right-hand side of the RMW for each hazard, where leaders can input the residual risk for hazards during planning, preexecution, and execution. The approval authority signs the risk assessment in the planning phase and may delegate the preexecution and execution reevaluations one level down. Delegation of the revaluation includes specific instructions about notification in the event that the hazards of the mission are upgraded because of changes in conditions. The approval authority may choose to retain direct reevaluation responsibility if he wishes.

Composite risk management doctrine is sound, but it is not embodied in Army culture. The operational risk management worksheet embeds this doctrine and will help the Army reduce on-duty accidents in a dramatic way over the long term. Operational risk management will help the Army keep the promise of “Mission First, Soldiers Always” by providing the right information at the right time, resulting in improved decisionmaking, resource allocation, Soldier survivability, and mission accomplishment.

MAJOR JEREMIAH O’CONNOR is the officer-in-charge of the Support Operations Material Readiness Branch, 101st Sustainment Brigade, at Fort Campbell, Kentucky. He holds a B.S. degree in Civil Engineering from Michigan Technological University and an M.S. degree in Management Logistics from Northern Illinois University. He is a graduate of the Infantry Officer Advanced Course, the Ranger Course, the Airborne School, and the Combined Logistics Officers Advanced Course.
The Army Reserve Expeditionary Railway Center

To meet its Title 10 requirement to support the geographic combatant commands in using rail service as a combat multiplier, the Army Reserve has created the Expeditionary Railway Center.

In 2010, the Chief of Transportation, Brigadier General Edward F. Dorman III, identified a requirement gap in the Army’s Title 10 responsibility to support the geographic combatant commands (COCOMs) in effectively employing rail as a strategic multiplier throughout full-spectrum operations (FSO). The gap was significant because a functional analysis identified effective rail planning, assessment, analysis, and advisement as a geographic COCOM requirement.

**Force Design Update**

Host-nation support will undoubtedly become a larger function of the geostrategic environment of the 21st century. Since infrastructure and theater transportation are inextricably connected to the broader geostrategic environment, the current Chief of Transportation, Colonel (P) Stephen E. Farmen, has focused on modernizing Army rail capabilities that can exploit host-nation resources within the transportation spectrum.

This effort has led to a force design update (FDU) that will provide the rail capabilities required for the contemporary operational environment. This FDU for the existing Army rail infrastructure is essential since it has been more than 22 years since the last Army rail FDU. The FDU’s result is the Army Reserve (USAR) Expeditionary Railway Center (ERC), which will be an enduring Army rail capability for FSO. This FDU was approved by the Army Training and Doctrine Command’s Army Capabilities Integration Center.

The ERC is designed for the contemporary Army rail planning and targeting mission. The ERC can provide the expertise needed to aid in restoring and developing railway systems in foreign nations in support of national security. It can also directly improve the present and future global security environment.

The nature of the global security environment is increasingly complex. With it is the need to understand globalization that is driven by rapid technological advances, interdependent economies, and empowerment of individuals. In this environment, we must recognize the need to operate continuously within the human terrain, where peace and stability are only sustained by providing safety and security.

At the high and low ends of full-spectrum operations, we must recognize the ERC’s capabilities as the means of providing enduring security for the local population and the host nation. The ERC can simultaneously contribute to military deployment and distribution velocity, employment of a local population, and regional economic development.

**Expeditionary Railway Center Mission**

The mission of the ERC will—

- Provide rail network capability and infrastructure assessments.
- Perform rail mode feasibility studies and provide advice on the employment of rail capabilities.
- Perform and track railway rolling stock capability assessments, and provide an Engineer officer to facilitate roadway capability assessments and rebuild efforts.
- Coordinate road and bridge safety assessments.
- Perform and assist with rail planning in support of military strategic and operational requirements.
- Perform functions as the primary advisers on railway operations, including collaborating with host-nation railway officials to improve the national railroad business model and support nation building.
- Coordinate use and deconfliction of host-nation or contracted rail assets.
- Perform contracting officer’s representative duties to oversee contracts and provide quality assurance.
- Provide command, control, and supervision for subordinate railway personnel.
- Coordinate railway personnel.

The ERC will contribute to the Defense Distribution Process Owner’s (DDPO’s) alternatives for sustaining the velocity of deployment, distribution, and redeployment. Understanding that conditions of anti-access or area denial to theaters of operations are turbulent, the DDPO must not depend on a single host nation for a theater-sustaining line of communication (LOC). For example, today the Northern Distribution Network has multiple LOC options from origin to destination, and it provides an alternative to the Pakistan ground LOC for movement of military and other cargo into and out of Afghanistan.

**Army Rail Transformation**

It has been evident since early in Operation Iraqi Freedom that the existing Army rail capability must be transformed to provide relevant support for the contemporary conflict. In Iraq, the Army missed the opportunity to maintain an Army rail planning and assessment capability at interagency and various military headquarters levels, along with an assessment, advisory, and training assistance presence with the Iraqi Republican Railroad. Coalition distribution and the nation of Iraq could have benefited significantly from this investment. Dave DeCarne, who served as the Department of State (DOS) transportation attaché in Baghdad, Iraq, from 2008 to 2009, made the following observation:

As part of civil/military coordination and cooperation efforts in developing host-nation capacities, the U.S. Army rail transformation, working with U.S., coalition, and host-nation civilian elements, has the potential for improving rail system operations which in turn can be a significant contributor to broader economic development.

First, the ERC offers a capability to see and plan for rail LOCs, such as the Northern Distribution Network, early in the geographic COCOM’s planning effort. Next, the ERC team can conduct peacetime military engagements for country rail system restoration and development. Finally, the ERC responsively deploys to contribute to stability operations or combat operations in the execution of a theater distribution plan and host-nation rail system strategic development.

This capability is designed not only as a deterrent to persistent conflict but also as a response for persistent containment. The safety and security of an indigenous population is a compelling and powerful force against insurgency and radical political or religious groups.

**How Railway Use Affects the Host Nation**

Historically, a developing country’s stability and economic growth can be tied to a national railroad system that is regionally connected. Any use of a host-nation railroad system for sustaining theater deployment, distribution, and redeployment should be accomplished with the intent of developing the nation’s economic engine and employing as much of the local population as possible. In so doing, we improve individual security...
as well as national and regional stability. The strategic
will be readily available.
ment. Under many conditions, the same responsiveness
tal, and multinational team. Understandably, the USAR
ployed along with a joint, interagency, intergovernmen-
alysis can be mobilized for deployment. Under many conditions, the same responsiveness
ed at the same time.
ly into theater engagement and TDPs provides a means of countering inaccessibility and area-denial conditions.
ment for the United States. The Army Reserve will gen-
erate a sustained flow of trained and ready Army rail forces for FSO on a rotational cycle with five railway
vestment and advisory teams, and it will do this at well below the cost for the Active component to maintain
the structure. The ERC is a low-density capability with a critical contribution to the Army’s versatile mix of modular organizations. The Army Reserve is ideally suited to provide the ERC for expeditionary military operations and international engagement activities, such as nation building and security cooperation.
Employer Partnership Initiative
Sustaining this critical expeditionary and interna-
tional engagement capability can be accomplished in part through effective stationing of the ERC planning and advisory teams in cities where we find Class 1 rail-road headquarters or their interchange points. We will continue to capitalize on this opportunity as we expand and maintain the relationship between the Armored Forces, an initiative begun when the ERC was published on 4 January 2011 by the Headquarters, Department of the Army, provides the following key structure guidance:
The Army’s goal is to build a versatile mix of tailorable and integrated organizations, operating on a rotational cycle, to provide a sustained flow of trained and ready forces for full spectrum opera-
ions and to hedge against unexpected contingencies, at a sustainable tempo for our All-Volunteer Force. The Army continues to experiment ten-
dous change. We remain at war and are balancing the operating and generating forces across the program while addressing the challenge to balance requirements with affordability.
employers.
licit and return to peace and stability operations. Then
military capabilities essential to the total force."
Overall, the USAR ERC provides a great return on invest-
ment for the United States. The Army Reserve will gen-
erate a sustained flow of trained and ready Army rail forces for FSO on a rotational cycle with five railway planning and advisory teams, and it will do this at well below the cost for the Active component to maintain the structure. The ERC is a low-density capability with a critical contribution to the Army’s versatile mix of modular organizations. The Army Reserve is ideally suited to provide the ERC for expeditionary military operations and international engagement activities, such as nation building and security cooperation.

**Employer Partnership of the Armored Forces offers a great opportunity for the Army Reserve to take advantage of the rail expertise offered by U.S. railroad employees.**

The USAR ERC provides a great return on investment for the United States. The Army Reserve will generate a sustained flow of trained and ready Army rail forces for FSO on a rotational cycle with five railway planning and advisory teams, and it will do this at well below the cost for the Active component to maintain the structure. The ERC is a low-density capability with a critical contribution to the Army’s versatile mix of modular organizations. The Army Reserve is ideally suited to provide the ERC for expeditionary military operations and international engagement activities, such as nation building and security cooperation.

**Employer Partnership Initiative**
Sustaining this critical expeditionary and international engagement capability can be accomplished in part through effective stationing of the ERC planning and advisory teams in cities where we find Class 1 railroad headquarters or their interchange points. We will continue to capitalize on this opportunity as we expand and maintain the relationship between the Armored Forces, an initiative begun when the ERC was published on 4 January 2011 by the Headquarters, Department of the Army, provides the following key structure guidance:
The Army’s goal is to build a versatile mix of tailorable and integrated organizations, operating on a rotational cycle, to provide a sustained flow of trained and ready forces for full spectrum operations and to hedge against unexpected contingencies, at a sustainable tempo for our All-Volunteer Force. The Army continues to experience tremendous change. We remain at war and are balancing the operating and generating forces across the program while addressing the challenge to balance requirements with affordability.
With those qualities in mind, the Army rail FDU is best sustained in the Army Reserve for affordability and accountability, and good fit for the 24-hours-a-day, 365-days-a-year culture of the railroad industry. Military experience translates to management opportunities with U.S. railroads.

**Army Railway Planning and Advisory Team**
The Army will benefit by capitalizing on the skill-
rich characteristics of Army Reserve warrant officers. However, the Army Reserve must run the ERC without SDDC, the Army’s “Global Surface Transportations Experts.” The SDDC mission is to “provide expeditionary and sustained end-to-end deployment and distribution to meet the Nation’s objectives.” The SDDC vision is for its employees to be the “recognized and trusted leaders in delivering innovative end-to-end deployment and distribution excellence across the full range of military operations.” Rail is a significant component and enabler of the SDDC mission and vision. SDDC plays a critical role in Army rail transformation for FSO.

SDDC and the Army Reserve, in support of the U.S. Central Command and the International Security Assistance Force, have had an Army railway planning and advisory team deployed to Kabul, Afghanistan, since October 2011. The team brings with it strong civilian-acquired skills and operations experience from CSX, the Sierra Northern Railroad Company, and the Terminal Railroad Company.
In Afghanistan, this team is contributing to the following main objectives:
- Acquire strong visibility on the Government of the Islamic Republic of Afghanistan’s (GIRoA’s) initiatives to start effective operations on the new Mazar-Hairatan Railway, which contributes to high-speed high-spectrum military operations through the improved velocity of military cargo movement into and out of the nation.
- Work with the International Security Assistance Force, the U.S. Department of State, and the GIRoA to develop an Army rail strategy for Afghanistan, focusing on sustainable regional stability and economic development with a return to peacetime military engagement.
- Transition the GIRoA’s Ministry of Mines, which strategically link GIRoA’s national rail system to coal and iron ore deposits. This is a strategy with potential for sustained revenue streams and regional economic development.

SDDC is also working with the U.S. Africa Command to conduct peace-time military engagements between civilian railway operators and the Army Reserve and to assist the Uganda Peoples Defence Force (UPDF). In Uganda, the U.S. Army rail team will assess and provide advice on the UPDF unit’s mission, force structure, typical operations, maintenance tasks, exercise participation and training programs.

The team will discuss ways to assist the UPDF in developing a concept of operations for a Ugandan railroad battlefield, along with all of the training, curriculum, and tools, techniques, and procedures that may be required. This effort will continue with a visit by UPDF officers to the United States in 2012 as part of continuing to develop the military-to-military engagement.

The engagements in Afghanistan and Uganda can be a springboard to overcoming the capabilities gap discovered by Brigadier General Dorman in 2010. The gap can be closed if the Army acts with foresight to use the talent and synergy of the USAR ERC along with SDDC, the Transportation Engineering Agency, and the employer partnership of the Armored Forces initiative. If integrated and used in a concerted and continuing way to answer the rail advisory requirements of geographic COCOMs, the gap remains closed. Rail support to Af-

**Employer Partnership of the Armored Forces offers a great opportunity for the Army Reserve to take advantage of the rail expertise offered by U.S. railroad employees.**

The USAR ERC provides a great return on invest-
ment for the United States. The Army Reserve will gen-
erate a sustained flow of trained and ready Army rail forces for FSO on a rotational cycle with five railway planning and advisory teams, and it will do this at well below the cost for the Active component to maintain the structure. The ERC is a low-density capability with a critical contribution to the Army’s versatile mix of modular organizations. The Army Reserve is ideally suited to provide the ERC for expeditionary military operations and international engagement activities, such as nation building and security cooperation.

**Employer Partnership Initiative**
Sustaining this critical expeditionary and interna-
tional engagement capability can be accomplished in part through effective stationing of the ERC planning and advisory teams in cities where we find Class 1 railroad headquarters or their interchange points. We will continue to capitalize on this opportunity as we expand and maintain the relationship between the Armored Forces, an initiative begun when the ERC was published on 4 January 2011 by the Headquarters, Department of the Army, provides the following key structure guidance:
The Army’s goal is to build a versatile mix of tailorable and integrated organizations, operating on a rotational cycle, to provide a sustained flow of trained and ready forces for full spectrum operations and to hedge against unexpected contingencies, at a sustainable tempo for our All-Volunteer Force. The Army continues to experience tremendous change. We remain at war and are balancing the operating and generating forces across the program while addressing the challenge to balance requirements with affordability.
With those qualities in mind, the Army rail FDU is best sustained in the Army Reserve for affordability and accountability, and good fit for the 24-hours-a-day, 365-days-a-year culture of the railroad industry. Military experience translates to management opportunities with U.S. railroads.

**Army Railway Planning and Advisory Team**
The Army will benefit by capitalizing on the skill-rich characteristics of Army Reserve warrant officers. However, the Army Reserve must run the ERC without SDDC, the Army’s “Global Surface Transportations Experts.” The SDDC mission is to “provide expeditionary and sustained end-to-end deployment and distribution to meet the Nation’s objectives.” The SDDC vision is for its employees to be the “recognized and trusted leaders in delivering innovative end-to-end deployment and distribution excellence across the full range of military operations.” Rail is a significant component and enabler of the SDDC mission and vision. SDDC plays a critical role in Army rail transformation for FSO.

SDDC and the Army Reserve, in support of the U.S. Central Command and the International Security Assistance Force, have had an Army railway planning and advisory team deployed to Kabul, Afghanistan, since October 2011. The team brings with it strong civilian-acquired skills and operations experience from CSX, the Sierra Northern Railroad Company, and the Terminal Railroad Company.
In Afghanistan, this team is contributing to the following main objectives:
- Acquire strong visibility on the Government of the Islamic Republic of Afghanistan’s (GIRoA’s) initiatives to start effective operations on the new Mazar-Hairatan Railway, which contributes to high-speed high-spectrum military operations through the improved velocity of military cargo movement into and out of the nation.
- Work with the International Security Assistance Force, the U.S. Department of State, and the GIRoA to develop an Army rail strategy for Afghanistan, focusing on sustainable regional stability and economic development with a return to peacetime military engagement.
- Transition the GIRoA’s Ministry of Mines, which strategically link GIRoA’s national rail system to coal and iron ore deposits. This is a strategy with potential for sustained revenue streams and regional economic development.

SDDC is also working with the U.S. Africa Command to conduct peacetime military engagements between civilian railway operators and the Army Reserve and to assist the Uganda Peoples Defence Force (UPDF). In Uganda, the U.S. Army rail team will assess and provide advice on the UPDF unit’s mission, force structure, typical operations, maintenance tasks, exercise participation and training programs.

The team will discuss ways to assist the UPDF in developing a concept of operations for a Ugandan railroad battlefield, along with all of the training, curriculum, and tools, techniques, and procedures that may be required. This effort will continue with a visit by UPDF officers to the United States in 2012 as part of continuing to develop the military-to-military engagement.

The engagements in Afghanistan and Uganda can be a springboard to overcoming the capabilities gap discovered by Brigadier General Dorman in 2010. The gap can be closed if the Army acts with foresight to use the talent and synergy of the USAR ERC along with SDDC, the Transportation Engineering Agency, and the employer partnership of the Armored Forces initiative. If integrated and used in a concerted and continuing way to answer the rail advisory requirements of geographic COCOMs, the gap remains closed. Rail support to Af-
gainst the capabilities gap discovered by Brigadier General Dorman in 2010. The gap can be closed if the Army acts with foresight to use the talent and synergy of the USAR ERC along with SDDC, the Transportation Engineering Agency, and the employer partnership of the Armored Forces initiative. If integrated and used in a concerted and continuing way to answer the rail advisory requirements of geographic COCOMs, the gap remains closed. Rail support to Af-
gainst the capabilities gap discovered by Brigadier General Dorman in 2010. The gap can be closed if the Army acts with foresight to use the talent and synergy of the USAR ERC along with SDDC, the Transportation Engineering Agency, and the employer partnership of the Armored Forces initiative. If integrated and used in a concerted and continuing way to answer the rail advisory requirements of geographic COCOMs, the gap remains closed. Rail support to Af-
Military Culinary Arts Competition 2012

Twenty-two full teams and 320 competitors from all 5 branches of the armed services participated in the 37th Annual Military Culinary Arts Competition from 29 February to 7 March 2012 at Fort Lee, Virginia. Additions to this year’s culinary arts competition included two new categories—an international competition and live showcase cooking—and a new student category for each of the main competitive categories.

Canada, Germany, and the United States competed in the international competition. Two chefs, hand-picked from each country’s military, competed in the “mystery basket” event, where they had 4 hours to prepare a 4-course meal for 4 people. The U.S. Team, two enlisted aides to Chairman of the Joint Chiefs of Staff (CJCS) General Martin E. Dempsey, Sergeant Major Mark Morgan and Master Sergeant Jesus Camacho, came in first. German competitors came in second place (and also received a gold medal), and Canadian chefs placed third (with a silver medal).

In other categories, Team Fort Stewart, Georgia, won several major awards this year, including Installation of the Year (ahead of Team Pentagon and Team Fort Hood, Texas), the Baron H. Galand Culinary Knowledge Bowl, and the Student Team Competition.

Members of the Fort Stewart team also claimed the top individual honors. Sergeant Major David Turcotte was named the Armed Forces Senior Chef of the Year. Specialist Jacquelyn Candiy, also from Team Fort Stewart, was named the Armed Forces Junior Chef of the Year. Chief Petty Officer Derrick Davenport, an aide to Chief Food Service Specialist Jason Stagnitto and Food Service Specialist First Class Edward Fuchs, Team Coast Guard, were named the Nutritional Hot Food Challenge champions, and Team Coast Guard won the Judges Special Award for their cold food table display. The following are the individual results for the major culinary arts categories:

A Canadian chef prepares fish during the international competition portion of the Military Culinary Arts Competition at Fort Lee, Virginia. (Photo by Julianne E. Cochran, Army Sustainment)
Reflects Fiscally Constrained Environment

Army Fiscal Year 2013 Budget Request

fiscal year (FY) 2013 budget request totals $184.64 billion, a 14.51-percent decrease from the FY 2012 budget request. The FY 2013 base budget request is $134.588 billion, 7.1 percent less than the FY 2012 request, and the overseas contingency operations (OCO) funding request for FY 2013 is $50.052 billion, a decrease of 29.61 percent from FY 2012.

Spend reductions by major category are—

- Military personnel: $63.301 (very close to the FY 2012 level).
- Operation and maintenance: $76.008 billion (15.35 percent less than the FY 2012 request).
- Procurement: $19.649 billion (19.28 percent less).
- Research, development, test, and evaluation: $8.949 billion (a decrease of 7.68 percent).
- Military construction: $34.841 billion (down 33.73 percent from the FY 2012 request).
- Family housing: $535 million (down 21.55 percent from the request for the previous fiscal year).
- Joint Improvised Explosive Device Defeat Fund: $1.029 billion (down 32.05 percent).
- Chemical demilitarization: $1.453 billion (down 10.86 percent).
- Afghan Security Forces Fund: $5.749 billion (down 55.09 percent).

The procurement request for FY 2013 includes funding for the acquisition of—

- 59 UH-60M Black Hawk helicopters for $1.222 billion.
- 44 CH-47 Chinook helicopters, including 25 new and 19 rebuilts, for $1.391 billion.
- The upgrade of 2,224 mine-resistant ambush-protected (MRAP) vehicles for $1.055 billion.
- 441 items in the family of heavy tactical vehicles, including 103 light equipment transporters, 5 heavy expanded-mobility tactical truck load handling systems, 327 enhanced container handling units, 2 N978 tankers, and 1 M984A4 wrecker, totaling $54.983 million. (This is a 91.85 percent decrease in the request from FY 2012.)
- 1,298 trucks and 99 trailers in the family of medium tactical vehicles for $74.362 million.
- Recapitalization of 2,128 up-armored high-mobility multipurpose wheeled vehicles for $271 million.
- 211 petroleum and water distribution systems for $38.385 million.
- 1 Force Provider module for $39.7 million.
- 228 field-feeding systems, including 149 M6801 refrigerated container systems and 79 assault kitchens, for $27.417 million.

Department of Defense Funds Army-Led Programs to Improve Battlefield Energy Security

On 31 January 2012, the Department of Defense announced the release of $18 million to fund military programs aimed at reducing energy demands of future expeditionary outposts. More than half of the money for the Operational Energy Capabilities Improvement Fund Program is going to three Army-led projects.

- The Innovative Cooling Equipment (ICE) Development/Demonstration Program, led by the Army Communications-Electronics Research, Development, and Engineering Center at Aberdeen Proving Ground, Maryland, is receiving $2.5 million this fiscal year. The project focuses on implementing advances in thermodynamic cycles, electronics and digital controls, components, and waste-heat recovery to reduce the electric loads of heating and air-conditioning systems on the battlefield, and, in turn, fuel consumption and fuel convoys on the battlefield.

- Advanced, Energy Efficient Shelter Systems for Contingency Basing and Other Applications, led by the Army Natick Soldier Research, Development, and Engineering Center at Natick, Massachusetts, will receive $5.997 million to develop and demonstrate the next generation of energy-efficient shelters. The goal is to demonstrate and transition to shelter systems that will reduce heating and cooling requirements by 50 percent, while providing improved capabilities and quality of life.

- Operation Enduring Freedom Energy Initiative Proving Ground, led by the Army Research, Development and Engineering Command’s Field Assistance in Science and Technology Center at Begram Airfield, Afghanistan, which will receive $1.425 million. The program is designed to establish a baseline for energy and fuel use in expeditionary operations in Afghanistan and to evaluate the benefit of energy-related technologies, such as improved heating and air-conditioning units, insulating tent liners, solar tent shades, and hybrid solar-electric power.

Army Leaders Unveil 2012 Posture Statement

Secretary of the Army John McHugh and Army Chief of Staff General Raymond Odierno presented the Army’s 2012 Posture Statement to Congress on 17 February 2012. A Statement on the Posture of the United States Army 2012 lays out the priorities and guiding principles for the upcoming year. This year’s focus is on a force that is “smaller but reversible” as well as fiscally responsible and energy efficient. According to the Army's Posture Statement, the Army “must avoid the historical pattern of drawing down too fast or risk losing leadership and capabilities, and it must harder to expand again when needed.”

The posture statement says that the Army’s operational focus remains on Afghanistan, but the country’s geography, distance, infrastructure, and harsh environment will make a drawdown from Afghanistan more difficult and complex than the drawdown from Iraq was. According to the statement, the Army will require reset funding 2 to 3 years after the drawdown from Afghanistan is complete.

Along with funds needed for reset, the posture statement notes that the infantry fighting vehicle has reached the limit of its capacity to receive critical upgrades. As a replacement, the Army is pursuing its ground combat vehicle (GCV) strategy over a 7-year period. The posture statement notes that the Army has reduced risk within the GVC program by requiring industry to identify potential cost, schedule and performance tradeoffs, and cost targets throughout the GCV’s life cycle. The Army has also worked to maximize competition within the program to support innovation, cost containment, and schedule requirements.

The Army will also pursue the joint light tactical vehicle (JLTV) program this year with a goal of replacing one-third of its high-mobility multipurpose wheeled vehicles. The posture statement notes, “The JLTV balances protection, payload, performance and improved fuel efficiency.”

One initiative guiding fiscal responsibility efforts is the Army Financial Improvement Plan, which is designed to enable the Army to be fully auditable by fiscal year 2017. Another is acquisition reform. The Army has made changes in four broad areas by—

- Realigning acquisition requirements and placing more focus on the needs and competencies of acquisition professionals.
- Expanding stakeholder participation in acquisition requirements, planning, and solicitation.
- Streamlining acquisition strategies and reappraising the risk associated with this streamlining.

U.S. Army Reserve Vessel Supports Operation Enduring Freedom

The U.S. Army Vessel Kennesaw Mountain began a yearlong deployment in support of Operation Enduring Freedom in January. Kennesaw Mountain is part of the 12th Transportation Company, a U.S. Army Reserve unit from Morehead City, North Carolina. The 174-foot-long warcraft has a crew of 17 Soldiers and a mission to carry material throughout the Persian Gulf during its deployment. (Photo by CPT Jeffrey Daniel)

Professional Development


A new desk reference provides tools to reduce the possibility of terrorist attacks related to commercially provided services on Army-controlled installations and facilities. The reference, entitled “Integrating Antiterrorism and Operations Security Into the Contract Support Process,” was published on 25 January in response to the Army’s awareness of the possibility of terrorist attacks by contract employees. The guide outlines the tactics, techniques, and procedures contracting specialists need to integrate into the contract support process to reduce the possibility of terrorist actions.

The reference describes the antiterrorism and operations security steps that need to be taken during each phase of the process and offers suggestions for performance work statement language and elements for a quality surveillance system.

The desk reference is available through Army Knowledge Online at https://www.us.army.mil/suite-page/605757.

Headlines
First Stryker Maintainers Class Graduates From Army Ordnance School

On 16 February 2012, 20 Soldiers graduated from the Army Ordnance School at Fort Lee, Virginia, to become the Army’s first vehicle mechanics who were awarded the additional skill of vehicle mechanics. Before the MOS was created, Soldiers now report directly to the Army Training and Doctrine Command for inactivation as an efficiency measure. The Army Accessions Command’s subordinate organizations, the Army Recruiting Command, the Army Cadet Command, and initial-entry-training organizations. Since the size of that mission has decreased, last year the Department of Defense and the Department of the Army selected the Army Accessions Command for inactivation as an efficiency measure. During the inactivation ceremony at Fort Knox, Kentucky, a series of presentations and break-out sessions will provide a great opportunity for each of you to contribute to mission analysis and course-of-action development for issues facing the Ordnance Corps.

Recently Published

Army Techniques Publication (ATP) 4–91, Army Field Support Brigade, published 15 December 2011, is the second ATP published by the Army under the Doctrine 2015 initiative. The ATP provides an overview of the Army field support brigade (AFSB) organization and outlines the missions the AFSB has in contingency operations and in supporting units throughout the Army Force Generation process.

Energy efficiency is also helping to save money and the joint petroleum community needs a strength of forces that are available to meet the mission, and ensure more capability for less cost by improving fuel efficiency and effectiveness in building the future force. Burke said that the acquisition community holds the key to changing the way the department uses fuel, and she reminded the audience that the acquisition process is complicated and it will take some time to change the system.

Joint Petroleum Seminar Hosts Its Largest Class

The Joint Petroleum Seminar hosted its largest class ever from 5 to 9 December 2011 at the Defense Logistics Agency (DLA) Energy headquarters at Fort Belvoir, Virginia. Forty-three military and civilian fuel officers from across the services took part in a week-long seminar, now in its 10th year, sponsored by the Joint Staff Joint Petroleum Office and DLA Energy. The seminar is designed to strengthen the professionalism of fuel officers, military service fuel staffs, DLA Energy field office personnel, and others who work in the joint petroleum arena. During the seminar, students were exposed to a wide range of topics, including petroleum characteristics, Department of Defense and joint fuel organizations, joint doctrine, global combat support systems, alternative fuels, fuel exchange agreements, fuel pricing, DLA Energy business processes, and war and peacetime fuel requirements determination.

Performance-Based Life-Cycle Support 2012

Worldwide Business Research will host Performance-Based Life-Cycle Support 2012 from 16 to 18 July 2012 at the Washington Plaza Hotel in Washington, D.C. The event includes panel discussions on the future of outcome-based life-cycle product support, streamlining the supply chain to reduce costs through performance-based agreements, and the effect investing in human capital can have on sustainment. For more information or to register, go to the conference website: www.pbusa.com.
Coming in Future Issues

- Supplying the Forces While Rightsizing Ammunition Storage
- Developing Logistics and Property Accountability in Afghanistan
- Rethinking the Last Tactical Mile
- Split-Based Medical Support Operations
- Rapidly Redeploying the Global Response Force From Haiti
- Hybrid Airships for Lift
- Defining the CSSB Mission at JRTC
- Operational Contract Support Beyond Contingencies
- The 3d Sustainment Brigade Embraces Finance
- The Road to Sayed: Recovery Operations in Northern Afghanistan
- SSA Operations in Regional Command North